INTERNATIONAL MONETARY FUND

STAFF PAPERS

Vol. III October 1953 No. 2

The Adequacy of Monetary Reserves

ON JUNE 30, 1952, the Economic and Social Council of the United Nations (hereinafter referred to as ECOSOC) began consideration of a report, *Measures for International Economic Stability*, prepared by a group of experts[1] appointed by the Secretary-General pursuant to a resolution adopted by ECOSOC on August 15, 1950. Chapter IV of the report, entitled "International Monetary Reserves", states "Our examination of existing reserves has convinced us that they are not in general adequate." The chapter gives reasons for this conclusion and discusses means of increasing reserve adequacy—including increasing the size of the resources of the International Monetary Fund and making its resources more readily available to members. While the chapter considers the adequacy of monetary reserves generally, its primary emphasis (in accordance with the experts' terms of reference) is on their adequacy to protect countries from deflationary shocks of external origin and to check the international spread of depression.

After consideration of the report, ECOSOC adopted a resolution on July 10, 1952, the operative paragraphs of which referring to the International Monetary Fund are as follows:

> "5. *Urges* the International Monetary Fund, in supporting the efforts of its members to meet balance of payments difficulties arising from recession:
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> (a) To apply its rules flexibly and, in this connexion, to give careful consideration to the suggestions contained in chapter IV of the report entitled *Measures for International Economic Stability;* and
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> (b) To be prepared to use its resources as promptly and as fully as is consistent with its Articles of Agreement;
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> 6. *Requests* the International Monetary Fund:
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> (a) To keep under continuing review the adequacy of monetary reserves for the purpose of helping countries to meet temporary disequilibria in their balances of international payments, having in mind the desirability of:
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> (i) Avoiding, to the extent practicable, recourse to restrictions on

[1] The group included James W. Angell, Professor of Economics and Executive Officer, Department of Economics, Columbia University; G. D. A. MacDougall, Fellow of Nuffield College and Reader in International Economics, Oxford University; Javier Marquez, Alternate Executive Director, International Monetary Fund, formerly Professor of Economics, National School of Economics, Mexico; Hla Myint, Lecturer in Colonial Economics, Oxford University, formerly Professor of Economics, Rangoon University; and Trevor W. Swan, Professor of Economics, Australian National University.

trade and payments imposed for balance of payments reasons, and of promoting general convertibility of currencies and liberalization of trade;

(ii) Creating conditions favourable to a steady expansion of international trade, and to high levels of production and consumption, employment and real income; and

(b) To furnish an analysis of this question to the Council in 1953."

Two aspects of reserve adequacy are stressed in the resolution. Paragraph 6(a)(i) stresses adequacy of reserves to permit removal of trade and exchange restrictions imposed for balance of payments purposes and the attainment of general convertibility of currencies. Paragraph 6(a)(ii) stresses adequacy of reserves to expand world trade and to maintain high levels of employment and real income—and so, inferentially, to check the spread of depression. This paper will be concerned with both aspects, which may be characterized as the *multilateral trade* and *high level employment* aspects, respectively.

The paper as a whole has been prepared on a technical level.[2] It is an analysis of the factors affecting reserve adequacy. It is not to be construed as a statement of Fund policy, and its general conclusions are not to be taken as indicating Fund attitude on specific country situations or day-to-day operating problems.

Nature of Monetary Reserves and the Concept of Adequacy

The concept of "adequacy" is a difficult one, and any standard of adequacy must be based upon a consideration of the purposes which monetary reserves are meant to serve and the obstacles which are expected to be encountered in fulfilling these purposes. While the concept of adequacy presents the greatest complexity, the concept of "monetary reserves" itself bristles with difficulties. It may be helpful, therefore, to start by considering first the nature of monetary reserves and then the meaning of the term adequacy.

Nature of monetary reserves

Monetary reserves may be defined narrowly or broadly. The most useful type of definition depends upon the purpose intended to be served.

[2] This paper has been prepared under the supervision of Mr. Henry Murphy, Chief of the Financial Problems and Policies Division, Research Department. It was discussed in July 1953 at the sixteenth session of ECOSOC, held in Geneva. In the paper submitted to ECOSOC, the tables recorded figures for 1928, 1938, and 1951. In the present paper, the 1938 and 1951 figures have been revised, figures for 1952 have been added, and a number of consequential amendments to the text have been made.

If the purpose is statistical or legal, the definition must, before all else, be precise. When the broader implications of reserves are taken into account, however, a precise definition is not possible without a loss of realism.

Some items are included in the term "reserves" by universal agreement. Beyond these, potential items shade away imperceptibly from those whose reserve character is almost as clear as those conventionally included in reserves to those which are scarcely reserves at all. A similar hierarchy exists for items which might be considered as deductions from reserves. Because of the essentially arbitrary character of all cutoff points, narrow definitions of reserves fail to give a true picture of the relative international liquidity of different countries. Precise reserve computations are also subject to discontinuous changes in time, as portions of a country's assets move into or out of the categories formally characterized as "reserves", or as portions of a country's liabilities are formally allowed, or cease to be formally allowed, as deductions. Consequently, when the purpose is to consider the over-all "deficit-financing power" of different countries or regions, as is true for this paper, it is desirable, in principle, to treat the concept of reserves broadly, even though only narrow and particular concepts can be measured and compared.

Viewed in this manner, the monetary reserves of a country[3] may be defined as the assets which its authorities have available to meet payments to other countries. The nature and ownership of these funds may be quite varied. The two tests of the reserve, or near-reserve, character of any item which may be in doubt are, first, its availability to the monetary authorities of the country in case of need and, second, its acceptability by potential creditors.

Gold and currencies readily convertible into gold held by monetary authorities meet both of these tests perfectly and so form the core of the monetary reserves of most countries. Very short-term securities of countries with convertible currencies or private securities or bankers' acceptances of unquestioned credit and short maturity payable in such currencies and held by the monetary authorities of other countries meet both tests about equally well. The same is true of gold and convertible currencies or of any of the above-mentioned assets held by commercial banks or other financial institutions in countries where such institutions are considered to be part of the "official family" and are closely accountable to the monetary authorities.

Other items that meet only one of the two tests may, depending on the country and the time, be equivalent to reserves as defined above, and for some purposes could be included in reserves. In any event, their

[3] The reserve problems of the nonmetropolitan territories of a Fund member have special features which are not expanded in this paper.

availability in financing a deficit is an important factor in any consideration of the adequacy of reserves. For example, gold and convertible currencies and short-term securities held by others than the monetary authorities and their "official families" may in some countries and at some times function in much the same way as reserves. The holders may themselves use such assets to meet payments abroad, or they may sell such assets to the monetary authorities when required to do so by law or when induced to do so by financial considerations.

Apart from such assets, whose reserve character is diminished only by the fact that they are not held by the monetary authorities and their "official families", there are assets held by the monetary authorities which can perform the deficit-financing function, although not so widely or so readily as gold and convertible currencies, including short-term securities. These assets include inconvertible currencies, credit balances in bilateral or multilateral payments agreements (as EPU), and debt-type securities (other than those already mentioned) payable in foreign currencies, whether convertible or inconvertible, and having an international market.

While access to foreign exchange under predetermined conditions cannot be regarded as reserves, such rights do perform some of the functions of reserves and affect the standard of adequacy of reserves. Stand-by agreements and the provisions for drawing needed currencies from the International Monetary Fund, the right to incur debit balances with the EPU or under bilateral payments agreements, and established lines of credit against which a foreign currency may be drawn all provide means of meeting balance of payments deficits.

Some countries include stocks of silver and precious stones in their monetary reserves under the provisions of their national laws. These assets are not reserves in the meaning of the term used here, because they are not readily salable at an approximately predetermined price. They may, nevertheless, be salable abroad and could be used to secure additional foreign exchange when necessary. This may also be true of other commodities readily salable in international markets and of equity securities similarly salable. The possession of such assets by the monetary authorities or by others may affect the level of what may be regarded as adequate reserves, even if they are not included in a definition of reserves.

Monetary reserves, however they may be calculated, may be stated at their full gross amount or they may be stated "net" after subtraction of liabilities on account of which near-term payments may have to be made to foreigners—as, for example, short-term debts of the government, the monetary authorities, or the banking and business communities,

debit balances in clearing accounts, or foreign holdings of national currency.

As already noted, when it is necessary to give precision to the concept of monetary reserves, particular items (positive and sometimes negative) must be selected from the broad variety of reserve and near-reserve items just enumerated. Thus, a calculation of a member's monetary reserves pursuant to specified standards is necessary to determine its obligation, if any, to repurchase its currency from the Fund. Such calculations are based on the definitions of terms in Article XIX of the Fund Agreement. Reserve comparisons in which the need for precision is primarily statistical, rather than legal, present similar problems. Thus, data on movements of monetary reserves are presented in the Fund's annual *Balance of Payments Yearbook*, and data on their amount in its monthly publication, *International Financial Statistics*. Similarly, statistical comparisons of monetary reserves on several alternative bases are presented later in this paper. Each presentation or comparison helps in the understanding of over-all reserve adequacy. But any single basis of comparison can, at best, give only an approximation of the "real" amounts of the reserves actually available to the monetary authorities of each country in case of need.

The concept of adequacy

Adequacy of reserves depends on the prospective problems that confront a country and, therefore, will differ from country to country and from problem to problem. No amount of reserves can be adequate to finance a chronic or continuing imbalance in a country's payments. Therefore, the problem of reserve adequacy can be discussed meaningfully only for those countries prepared to take appropriate measures to balance their external accounts over an entire cycle—but which may, nevertheless, encounter substantial payments deficits in some years, or even occasionally for several years together.

It is obvious that this fundamental assumption of a strong and balanced payments position over the course of a cycle, which is essential for determining the adequacy of reserves for the only purpose for which reserves can ever be adequate, that is, to meet temporary needs, is not generally or even widely met by the situation currently prevailing. Some countries have failed to establish their exchange rates at appropriate levels, and other countries have been so concerned over assuring full employment or rapid economic development that their monetary policies have been too expansionist to enable them to bring their international payments into balance without severe exchange and import restrictions. Unless such countries are prepared to moderate their monetary policies,

and, if necessary, readjust their exchange rates, they will be under steady pressure in their international payments, and they will necessarily find that their reserves are inadequate to establish and maintain multilateral trade without widespread and continuing restrictions and discriminations.

While satisfactory fiscal and monetary policies are indispensable to establishing a strong payments position, it does not follow that a country with noninflationary fiscal and monetary policies and an appropriate exchange rate will inevitably have a strong payments position. The international payments position of a country is affected not only by its own policies, but also by those of the countries with which it trades. An inflationary fiscal or monetary policy or an unsatisfactory exchange rate in another country may cut off the flow of imports from customary sources and force the country to seek other sources of supply. And a restrictive import or exchange policy in another country with inflationary fiscal or monetary policies or an unsatisfactory exchange rate may make it difficult for a country with sound policies to maintain its exports and to earn the gold, dollars, or foreign exchange which it could secure under better conditions. No doubt, with severely rigorous policies and a far-reaching shift in the pattern of production, a country may offset the effects of bad policies of its trading partners. But that is a costly step which countries will seek to avoid as long as there is hope of securing better policies elsewhere.

It must be pointed out, furthermore, that the magnitude of the task of establishing a strong payments position which confronts countries with a tendency toward deficit in their international accounts will be importantly affected by the policies of countries with a tendency toward surplus. This applies most clearly to the commercial policies of the surplus countries. The deficit countries want to buy—and, in some cases, desperately need—the exports of the surplus countries; but, as the deficit countries have no monetary reserves to spare, they can pay for the exports of the surplus countries only with their own goods. If the surplus countries place or maintain onerous trade barriers on the receipt of these goods, the effect must be a general lowering of the level of world trade to the mutual impoverishment of both groups of countries.

Particular attention should be called to restrictions of the "escape clause" or "peril point" type—which, in effect, serve notice on countries endeavoring to increase their sales in the markets of the surplus countries using them, or endeavoring to break into such markets with new types of goods, that success in such efforts may result merely in an increase in trade barriers sufficient to restore the earlier (low) trade volume. Where such attempts involve substantial investment in special-

ized plant or equipment or specialized inventories or involve substantial advertising, the value of which would be lost if the attempts should fail, the existence of "escape clause" or "peril point" provisions may often be a sufficient obstacle to prevent serious attempts at materially increasing sales from being made at all.

In addition to policies with respect to trade barriers, the surplus countries' policies with respect to stockpiling may make an important difference in the situations of countries with serious balance of payments problems. Changes in stockpiling policies, which may mean relatively little to the surplus countries pursuing them, may make a vital difference in the economies, and even in the social and political orientation, of hard-pressed raw material producing countries.

The investment policies of the surplus countries can also do much to ease the payments problems of underdeveloped countries. A flow of capital on a commercial basis from regions where it is relatively abundant to those where it is relatively scarce—and, consequently, of high productivity—is justified by investment considerations alone and is in the mutual interest of both the lending and the borrowing countries.

But most important of all are the policies of the surplus countries with respect to their domestic levels of activity. Experience has shown that, in the United States in particular, the level of industrial activity is a far more important determinant of import volume than is commercial policy. Even a moderate slump in the United States would place a substantial strain on the economies and balance of payments positions of other countries, particularly producers of raw materials. Some fluctuation in U.S. business volume is inevitable, and countries exporting to the United States must allow for it in their calculations of what they can "afford" to import over a normal cycle. But they cannot and should not be expected to make similar provision for a period of severe depression and mass unemployment in the United States. Just as no amount of reserves can be adequate to sustain a chronic deficit due to their own inappropriate policies, so no practicable amount of reserves can be adequate to maintain convertibility without discriminatory exchange restrictions in the event of a major depression in the United States. Provision against this contingency can be made only by the United States itself through domestic and international policies aimed at preventing the occurrence or continuance of the depression.

Let us consider a country which has established a balanced payments position. That is, through a period covering prosperity and depression—but not a deep or prolonged depression—its receipts are adequate to meet its payments. The exchange rate is correct, the monetary policy is correct, and restrictions and discriminations continuing throughout

the cycle are not needed to shore up the payments position. For such a country, what is an adequate level of reserves? Four standards, each more rigorous than the preceding, can be suggested:

1. Enough to enable a country in bad years, by resort to restrictions, to maintain its external debt payments and to purchase the goods and services necessary to avoid hardship to its population or dislocation to its economy and the possible emergence of an exchange crisis, i.e., to permit a reasonable distribution over *time* of the payments which it can afford to make over the entire cycle;
2. Enough to maintain currency convertibility, barring a severe depression, but with occasional necessity to resort to trade and exchange restrictions for balance of payments purposes;
3. Enough to maintain currency convertibility, barring a severe depression, but without the necessity for occasional resort to trade and exchange restrictions;
4. Enough to maintain currency convertibility, even through severe depressions (but not through prolonged periods of international deflation such as occurred in the thirties), without either the necessity for occasional resort to trade and exchange restrictions or the necessity for resorting to domestic deflationary policies for the purpose of restraining imports, even if this involves a substantial drain on reserves.

It may be helpful to list some of the principal factors which must be taken into account in determining the "adequacy" category in which a given amount of reserves (expressed as a proportion of its trade) may place a country pursuing appropriate exchange rate and domestic financial policies. Without attempting to arrange them in order of importance (which would, in any event, vary greatly from country to country and from time to time), these factors may be listed as follows:

1. The normal seasonal variation in the country's imports and exports and in the service items in its balance of payments;
2. The extent to which the volume of its imports and exports is subject to extraordinary variation because of natural or other factors, e.g., crop failures, political or economic changes elsewhere, etc.;
3. The variability in the prices of its imports and in the prices of and demand for its exports;
4. The extent to which the country is dependent on imported raw materials, equipment, and essential foodstuffs to avoid dislocation of its economy or undue hardships to its population;
5. The size of its inventories of export goods and their components,

and of import goods and their products, and the extent to which these inventories could be compressed without hardship in the event of pressure on the country's reserve position;

6. The extent, if any, to which the country may expect adverse changes in its reserve position to be offset by "equilibrating" movements of short-term credit;

7. The prospect that the supply of reserves can be supplemented by grants-in-aid or long-term loans from other countries;

8. The extent to which the use, for international purposes, of actual holdings of reserve-type assets may be prevented by legal or other restrictions.

The first three factors (each dealing with variations in the amount and value of a country's imports and exports) and the fourth (dealing with its need for imports) are the most fundamental in the list, and can be altered by the country itself only by basic changes in the structure of its economy.

The fifth factor deals with inventories. It has already been suggested that stocks of goods readily salable on international markets might be considered to have an important bearing on the adequacy of a country's holdings of the more conventional type of reserves. When used in this sense, the concept of inventories may be enlarged to include both stocks of materials entering into the production of export goods and import goods and their derivative products. All such inventories permit either exports to be expanded for a while or imports to be contracted for a while, in case of necessity, thereby easing strains on reserves. The reciprocal relationship between inventories and reserves appears most clearly during periods when reserves are being run down to build up inventories or during periods when reserves are being increased or maintained only at the expense of inventory run-downs. In such cases the *combined* changes in holdings of reserves *plus* inventories may give a better clue to a country's real external position than either of these quantities taken separately.

The sixth factor enumerated above is short-term credit movements. At one time short-term credit movements were extremely important as means of supplementing the reserves of individual countries, and so as means for making smaller amounts of reserves go further. In the environment which has prevailed during most of the period since the beginning of the depression of the thirties, however, short-term credit movements have been, on the whole, of a disequilibrating rather than of an equilibrating character for most countries—although they still operate to the advantage of countries with substantial amounts of mobile capital, in the event of temporary stringencies in their payments positions. It

should be noted in this connection that there has been a great shrinkage during the past generation in the amount of one of the most important types of short-term international credit; bankers' acceptances created for the purpose of financing international trade, the outstanding amount of which ranged between the equivalent of $2 billion and $3 billion in the late twenties, have now very largely disappeared.

The seventh of the enumerated factors is the prospect that the balance of payments receipts of a country from other sources will be supplemented by long-term loans or grants-in-aid from other countries. Long-term loans are an important factor affecting reserve positions. Throughout most of the nineteenth century and well into the twentieth century, the United Kingdom and some other European countries were fairly consistent exporters of capital. When these countries were confronted with reserve stringencies they could often adjust their positions merely by cutting down on the outflow of long-term capital or by ceasing to export capital altogether. The capital exported by Europe was an important factor in the economic development of the newer countries. Long-term capital flows were not necessarily happy as far as their effects on the year-to-year *reserve* positions of the newer countries were concerned, however, as these countries often adjusted their levels of imports, exports, and reserves to an expected inflow of long-term capital and then suffered reserve crises whenever such inflows were suspended. But those newer countries with strong credit positions were often able to replenish their reserves in time of need by floating long-term loans for that purpose. The long-term capital movements brought about by such loans were decidedly equilibrating in character for the newer countries. Unfortunately, the possibility of floating such loans is much less today than it was even a few years ago, and the necessity of maintaining reserves is correspondingly greater.

The possibility of a deficit country receiving a grant-in-aid is principally a post-World War II development. Most grants-in-aid during the postwar period have been for the purpose of meeting balance of payments deficits arising from the physical devastation and disruption of trade and financial relationships caused by the war. Countries still in need of such grants are clearly in too weak a payments position to fall within the orbit of any of the categories of reserve adequacy used in this paper. Their problems are payments problems, not reserve problems. More recently, however, most grants have been for defense purposes. Such grants may be considered as part of the mechanism for financing the cost of a mutual defense system in which each country contributes resources, human and material, in proportion to its ability and situation. It seems proper, therefore, that the prospect of receiving such grants should be taken into consideration, along with other types

of prospective balance of payments receipts, in determining the adequacy of the reserves of the recipient countries.

The eighth, and last, factor enumerated above is the extent to which the use for international purposes of the reserve-type assets actually held by the monetary authorities is restricted by law or custom. The laws of many countries require that the authorities hold reserve-type assets equal to a stipulated proportion of the outstanding currency or some other objectively determined criterion. The effect of such laws is to reduce the adequacy for international purposes of any given amount of total holdings of reserve-type assets. The same effect may be produced in the absence of law if the climate of public opinion in a country is such that the holding of some minimum amount of gold or of other reserve-type assets is considered a practical necessity by the monetary authorities.

Reserves and confidence

The discussion thus far has proceeded on the implicit assumption that reserves are meant to be used and that, except as qualified in the immediately preceding paragraph, all reserves are, in fact, available for use. Neither of these assumptions is strictly true in a world in which uncertainty is, and will continue to be, a major factor in all economic calculations. In practice, if they are to fulfill their functions efficiently, reserves must be considerably larger than would be indicated by any reasonable evaluation of the probabilities of their actual use.

Assume, for example, that $500 million is the most pessimistic estimate of the amount of reserves which a country might reasonably need to meet an existing current account deficit before the deficit would either halt of its own accord or could be halted by the adoption of appropriate policies. (It is assumed, for convenience, that capital transfers are controlled and that this control is tolerably well enforced.) Assume, also, that the country's reserves are of just the amount necessary to meet the maximum expected deficit—namely, $500 million. This amount, despite its superficial appearance of adequacy, will prove inadequate if the pessimistic possibilities are actually realized. This follows from the fact that, in spite of prior estimates, no one will know how far the adverse balance of payments will actually run; consequently, if reserves run low, traders will lose confidence in their adequacy and will take steps to protect their positions. These steps—such as stockpiling beyond ordinary requirements, expediting payments for imports, and delaying the receipt of payments for exports—will involve additional reserve drains which would not have occurred at all if reserves had been truly adequate. As a consequence, a reserve run-down which would have amounted to only $500 million if reserves had been, say, $1 billion, may

result in a serious exchange crisis if reserves are actually only $500 million.

It follows that, in order to avoid the intermittent imposition of trade and exchange restrictions, reserves must be larger than any allowable current account deficit in order to maintain confidence and so hold down outpayments to the actual amount of the deficit. To secure the required confidence, it is necessary that there always be available, even at the very bottom of the cycle, a substantial volume of additional reserves which are uncommitted and available for immediate use.

Confidence, however, is a two-way street. Just as larger reserves promote confidence in a country's situation and so may make their use unnecessary, so confidence in a country's situation—and in its willingness to pursue appropriate policies—reduces the amount of reserves necessary to sustain this confidence. In the long run, the effect of "underlying" confidence upon the amount of necessary reserves is probably more important than the effect of adequate reserves upon confidence. The classic example, of course, is the United Kingdom before World War I, when London was the undisputed financial center of the world and operated on a minimal reserve base. At that time, other countries were able to hold a large portion of their reserves in sterling with full confidence in the universal acceptability of sterling which made it the practical equivalent of gold.

Over-all evaluations of reserve adequacy

The factors that determine the adequacy of reserves are not, in practice, precisely measurable. Basically, therefore, the adequacy of reserves is a matter of judgment—depending on the country, on the time, and on the purpose for which the reserves are intended. Furthermore, the prevalent opinion of the international business community concerning the adequacy of each country's reserves is itself a factor in determining their "real" adequacy—so that, in one sense, the reserves of a country are not adequate until the public thinks that they are adequate. Such opinions, it should be noted, are likely to be based as much on the trend in a country's reserve position as on its absolute amount; a moderate reserve position, well maintained, is likely to give an impression of greater adequacy than a large reserve position which has been rapidly declining, with no end clearly in sight.

That the adequacy of reserves cannot be precisely measured gives rise to the corollary that significant decisions depending in part upon reserve adequacy—e.g., decisions to impose or to relax exchange restrictions, to tighten or to relax monetary and fiscal policies, or to alter exchange rates—are based on the *opinions* of the relevant authorities, national and international, concerning this adequacy. The opinions of

these authorities are seen most clearly by their actions in the field of international financial policy. For example, the decision of the Canadian authorities in late 1951 to eliminate all exchange controls expressed more clearly than words their opinion that their payments position had become strong and could be maintained strong, with their level of reserves, by appropriate monetary policies and a fluctuating rate of exchange—an opinion amply justified by the developments of the succeeding period.

It is much more difficult to draw conclusions from the actions of the authorities in the fields of monetary and fiscal policy. This is because actions in these fields are often determined with greater reference to their domestic than to their international effects. For example, the restrictive actions of the U.S. monetary authorities in 1951 and 1952 (which commenced during a period of heavy gold outflow) were undertaken for purely domestic reasons and not because of anxiety concerning the adequacy of the international reserves of the United States. Such inferences may be drawn more reasonably, however, with respect to actions in countries where international trade comprises a larger proportion of total activity. For example, it is probably not inaccurate to say that the relaxation in the rigor of monetary policy in the Federal Republic of Germany, Belgium, and the Netherlands during 1952 reflected in large part a lower degree of concern by the authorities in these countries with respect to the adequacy of their monetary reserves.

Reserves and total resources

An adequate reserve position permits both the monetary authorities and the private traders of a country to look ahead and to plan their affairs with confidence. When reserves are inadequate, a country's foreign trade may be subject to sudden starts and stops, as restrictions are imposed or relaxed, or its exchange rate may fluctuate sharply. In whatever way imports are suddenly restricted below the level suited to the economy under a strong payments position, the result may be a serious dislocation of the economy.

It must not be overlooked that reserves are real resources from the point of view of the countries holding them, and the holding of reserves is only one of the possible uses competing for the limited amount of resources at the disposal of each country. In a rich country, or in a country in which there is little prospect of economic development, the maintenance of an adequate reserve position may necessitate no practical sacrifice. In a poor country, however, or in one in which the tempo of economic development is greater than can be accommodated by available resources, the maintenance of an adequate reserve position may be at the expense of urgently needed industrial or agricultural equipment, or

may even entail some hardship due to shortages of food or of other consumers' goods which might have been imported by using a portion of its reserves. It is inevitable, therefore, that poor and dynamic countries are tempted to sacrifice their reserve positions in favor of other uses of their real resources which they consider more urgent. This may often be sound policy. Indeed, such a transfer of resources would occur as a result of the operation of natural economic forces in the absence of state intervention, as it is of the essence of economics so to economize on scarce resources that the last unit employed in each use has an equal utility. If a country can improve its over-all position by transferring a portion of even an inadequate supply of reserves to some yet more urgent use, it is fully justified in doing so. On the other hand, countries may underestimate the real losses incurred because of inadequate reserves and so may tend to hold less reserves than they should, in their own interest.

In this respect, the reserves of countries have been compared with those of individuals. The monetary reserves of individuals (principally cash balances) serve much the same purposes as those of countries. They protect the individual's consumption from fluctuations in the amount and timing of his income, permit him to minimize his total outpayments by taking advantage of cash discounts, and allow him to prevent unfavorable developments in his situation from being magnified in their consequences because of the lack of adequate finances for dealing with them promptly. But, for individuals as well as for nations, monetary reserves are only one of a number of possible uses of resources competing for priority. Consequently, wealthy persons or persons with relatively few undertakings (although their incomes may fluctuate but little) are more likely than poorer or more active persons (although their incomes may fluctuate widely) to provide fully for reserves.

Therefore, it is normal to find, both for wealthy or more settled persons and for wealthy or more settled nations, that reserves are much larger in proportion to the apparent need for them than are the reserves of poorer or more dynamic individuals or of poorer or more dynamic nations. This tendency, at least on the international level, is often described as a "maldistribution of reserves". However, a high degree of maldistribution is normal and would reassert itself even if the reserves were redistributed—for, the poorer or more dynamic countries would apply part of their newly acquired reserves to higher priority uses, and the reserves disposed of in this way would return to the more wealthy or more settled countries. Of course, it does not follow that any given degree of maldistribution of reserves is compatible with a stable structure of world payments. An extremely high degree of maldistribution can, however, be corrected by appropriate changes in monetary and

fiscal policies in low-reserve countries. The adjustment can be made gradual, although protracted, if the newly mined gold is added to the reserves of the countries with the greatest reserve deficiency. But the period of adjustment can be shortened and its unavoidable cost in terms of deflationary pressure on the economy can be lightened by liberalization of commercial and external investment policies on the part of high-reserve countries.

Interaction of reserves and policy

As already noted, reserves and policy interact on one another, the strength of the interaction varying with the importance of foreign trade in a country's total economy. Restrictive policies result in the accumulation of reserves, while adequate reserves tend to modify and soften policies. When world-wide inflationary and deflationary pressures are in balance, this interaction between reserves and policy tends to work out well and promotes a well-balanced distribution of the available reserves among the trading countries of the world in the light of their preference for reserves and other types of investment.

If no fundamental change in the basis of monetary standards is assumed, the world supply of reserves may be increased (1) by additions to the volume or value of the world monetary gold stock, or (2) by the creation of new international assets and contra-liabilities of such a character that the creditors will consider their asset holdings as part of their reserves, but the debtors will make no corresponding deduction of their liabilities in the calculation of their own reserve positions. Aside from changes in the world supply of reserves, all reserves gained by one country must be at the expense of another. Some year-by-year increase in the total stock of reserves is necessary in order to maintain an expanding volume of world trade and stable prices. An expansion of this magnitude in the world stock of reserves tends to promote sound policies, and countries pursuing sound policies tend to secure an appropriate share of the total available reserves. Indeed, a country can be said to have a strong payments position only when it is acquiring such an appropriate share of newly created reserves. On the other hand, a too rapid increase in the world stock of monetary reserves tends to promote inflationary policies generally and in individual countries, while an increase of less than the optimum amount (or a decrease) tends to promote deflationary policies.

These observations are, of course, true only when a number of years are taken into consideration. In a single year, or even for several years, characterized by general expansionary psychology, a stationary stock of reserves (or even a declining one) may be compatible with expanding trade and price stability. On the other hand, in a year, or series of years,

characterized by general deflationary psychology, an extraordinarily large expansion in reserves may be necessary to support price stability and a continuing expansion in world trade.

Finally, it should be noted that the response of a country to an increase in its reserves or to an improvement in its balance of payments position is not likely to consist wholly in a relaxation or elimination of trade and exchange restrictions. It may consist wholly—and will probably consist partially—in a relaxation of its domestic fiscal and monetary policies. A general improvement in reserve positions during a time of world-wide inflationary pressures is likely, therefore, to reinforce those pressures.

Reserves and the growth of world trade

The necessary increment to reserves, if inadequacy of reserves is not to hamper the growth of multilateral trade, will depend primarily on the rate at which trade can grow. This in turn depends in large part on the growth of production throughout the world. Support of an appropriate rate of growth in world trade depends on the annual increment to the world's monetary gold stock and on other types of reserve assets created by national monetary systems and through the instrumentality of international agencies.

Newly mined gold is the principal source from which increments to gold reserves must be made. Unless this gold is in large part accumulated by the monetary authorities, it will not be effective in enabling countries to meet their needs for reserves. The increment to monetary gold stocks has been low in most postwar years. Monetary and exchange policies that leave doubt as to the future value of national currencies tend to divert newly mined gold into private hoards rather than into central holdings. Furthermore, little will be accomplished in securing adequate reserves for most countries for the future if all newly mined gold is regarded as an easy means of meeting continuing balance of payments deficits. Under such conditions, the newly mined gold will simply be concentrated in the reserves of a very few creditor countries, while the reserves of the rest of the world will be inadequate. A basic condition for adequate reserves in the long run is the maintenance of monetary and exchange policies that will enable countries not only to balance their international payments, but also to add part of the newly mined gold to their monetary reserves.

Adequacy of particular types of reserves

As already noted, assets are useful for reserve purposes only to the extent that they are acceptable for the external payments which the reserve holding country must meet. Before the depression of the thirties

—when most currencies were convertible either through the medium of buying and selling prices for gold or foreign exchange maintained by the monetary authorities of the issuing countries, or by the purchase and sale of exchange in the market place—most currencies could be held for reserve purposes, subject to the qualification that holdings of currencies with fluctuating exchange rates involved greater risk than holdings of currencies with fixed exchange rates. Since the onset of the depression, and particularly since the end of World War II, a large number of currencies have become inconvertible and can no longer be legally exchanged (either officially or through the market place) by the monetary authorities of the countries holding them for such other currencies as they may need to meet their external payments. As a consequence, the reserve problem—which once could be viewed as a whole—has tended to break into fragments, and a country may now be short of reserves in some currencies but have a surplus of them in others.

Reserves and the spread of depression

A function of reserves upon which considerable emphasis was placed in the planning for the postwar period is that of preventing the spread of depression from one country to another. A depression in any country will tend to reduce its imports, as these are related more or less closely to its national income. Hence, a depression in an important country will tend to reduce substantially the exports of other countries. If these countries maintain their imports, they will deplete their monetary reserves; if they do not, the exports of other countries will be reduced further and so the depression will tend to spread in an ever widening circle. One of the principal purposes of the International Monetary Fund is to combat this mechanism for the international spread of depressions.

The amount of reserves necessary to prevent the spread of a depression depends upon the duration and intensity of the depression in the country of primary origin and the importance of that country in world trade. Even a minor depression in an important trading country, such as the United States, may have serious consequences in some other countries. If the depression is deep and protracted at its point of origin, the amount of monetary reserves necessary to prevent its spread may become indefinitely large. If such reserves should be supplied entirely by the Fund and be subject to reasonably firm undertakings with respect to their repayment in the foreseeable future, they might not be able—however large the amount available—to check the spread of a severe depression, because many countries would probably contract their imports (and so other countries' exports) substantially, rather than pile up large debts which they saw no prospects of repaying. The problem presented by such conditions is referred to later in this paper (pp. 219–21).

Statistics of Monetary Reserves

A summary of monetary reserve statistics and a discussion of the methodology of their preparation are included in the June 1953 issue of *International Financial Statistics*, the monthly statistical publication of the International Monetary Fund. A reprint of part of that article is attached as an Appendix to this paper.

Monetary reserves are classified in that article as "gold", "foreign exchange", and "total", i.e., gold plus foreign exchange. It would be desirable if the "foreign exchange" item could be further subdivided into convertible and inconvertible currencies. Unfortunately, no comprehensive statistics are available on this basis. As will be seen by reference to the Appendix, the bulk of the monetary reserves of the world consists of holdings of gold, dollars, and sterling.

The official gold reserves and the total official reserves of gold and foreign exchange combined for a large number of countries, for the principal international monetary agencies, and for the world as a whole for the years 1928, 1938, 1951, and 1952 are given in Table 1. This table does not include data on reserve holdings for countries which are members of the Soviet bloc or for the dependent territories of the United Kingdom and of the continential EPU countries. The countries in the Soviet bloc are omitted because of inadequate data; the dependent territories are treated, for the purposes of this paper, as parts of the economies of their respective metropolitan countries. The reserves listed in the table include those held by monetary authorities only. Therefore, special caution should be used in interpreting comparisons between the data for 1951 and 1952 and those for earlier years for countries in which central banks have been established since 1928 or in which monetary reserves have been concentrated in the hands of the monetary authorities since that time. In such countries—Canada and Australia are especially in point—official reserve holdings in earlier years were, of course, supplemented by additional holdings of reserve-type assets in the hands of commercial banks.

In one sense it may be said that gold holdings constitute a "core within a core" of monetary reserves, as there are no contra-liabilities against them and they alone are "incompressible" and so must continue to exist in the same *physical* amount irrespective of any changes in their ownership. But the proportion of the total physical stock of gold held by the monetary authorities, and so counted as reserves, may vary; and the *monetary* value of this stock may also vary as a result of changes in the official price of gold. By far the most important price of gold is that in U.S. dollars, and it is in this unit that the gold reserves of all countries are stated throughout this paper.

The principal reason for the dramatic rise in the value of official gold

stocks between 1928 and 1938 is, of course, the increase in the price of gold in U.S. dollars. This rise in the value of gold stocks is a "real" one, however, as the purchasing power of each U.S. dollar (in which the gold is measured) rose between 1928 and 1938. Conversely, although the price of gold in dollars remained unchanged between 1938 and 1952, the purchasing power of the dollar fell.

The years used for comparison in the table were selected primarily on the basis of statistical convenience. The year 1928 was a good year in the twenties; the year 1938 was a fairly representative year in the thirties. It is true that 1938 was a low year for imports into the United States; however, it was not a particularly low year for U.S. exports or for imports into most other countries. It is, consequently, a satisfactory year for considering the reserve adequacy of most countries—and the adequacy of the reserves of the United States is not in question. The years 1951 and 1952 are the most recent ones for which comprehensive data are available. Particular years, of course, may not be representative for individual countries. Apart from the broad economic, industrial, and agricultural forces always operating to cause year-to-year variations, it should be noted that import levels are substantially affected by the reserve positions, the trade and exchange restrictions, the monetary and fiscal policies, and the exchange rates of individual importing countries, and by the convertibility of their own and other currencies.

Substantial changes have, of course, occurred in the reserve positions of individual countries and areas since the end of 1952, but they do not significantly change the long-term perspective to which this paper is directed. Data for the early months of 1953, as far as they are available, have been published in *International Financial Statistics*.

The foreign exchange reserves included in the figures for gold plus foreign exchange shown in Table 1 include holdings of "blocked" currencies. Consequently, for some countries (e.g., India) these total figures overstate the amount of reserves immediately available for settling adverse payments balances. For obvious reasons, special caution should be used in interpreting the world and regional totals for gold and foreign exchange combined. While gold is an asset in itself, with no corresponding contra-liability, foreign exchange other than gold is, in the nature of the case, both an asset to the holder and a liability to the issuer. The totals used in this table are, in every case, on a *gross* basis, i.e., the asset items are included but the liability items are ignored. This is the customary method of stating reserve statistics, and is, on the whole, more meaningful than an attempt to state them on a "net" basis, in which case foreign exchange would disappear completely as a reserve item for the world as a whole. The "double counting" involved in this procedure presents certain difficulties, however.

TABLE 1. OFFICIAL GOLD AND FOREIGN EXCHANGE RESERVES, BY COUNTRIES

(In millions of U.S. dollars)

	Gold[1]				Gold plus Foreign Exchange[1]			
	1928	1938	1951	1952	1928	1938	1951	1952
United States	*3,746*	*14,592*	*22,873*	*23,252*	*3,746*	*14,592*	*22,873*	*23,252*
Canada	*93*	*186*	*842*	*885*	*93*	*220*	*1,795*	*1,862*
Latin American Republics	*985*[2]	*690*[2]	*1,954*	*1,810*[2]	*1,160*[2]	*790*[2]	*3,025*[2]	*3,025*[2]
Dollar countries	70[2]	130[2]	1,057	930[2]	125[2]	165[2]	1,535[2]	1,620[2]
Bolivia	9	3	23	23	9	5	32	28
Colombia	24	24	48	n.a.	62	29	123	152
Cuba	n.a.	1	311	214	n.a.	2	495	460
Dominican Republic	n.a.	—	12	12	n.a.	n.a.	30	32
Ecuador	1	3	22	23	8	4	31	44
El Salvador	5	7	26	29	5	8	42	44
Guatemala	2	7	27	27	5	9	40	43
Mexico	6	28	207	144	10	42	269	273
Venezuela	21	n.a.	373	373	21	n.a.	373	434
Other[4]	n.a.	1[2]	8[2]	8[2]	n.a.	5[2]	100[2]	110[2]
Non-dollar countries	915[2]	560[2]	897	880[2]	1,035[2]	625[2]	1,490[2]	1,400[2]
Argentina	607	n.a.	268	n.a.	607	n.a.	n.a.	n.a.
Brazil	149	32	317	317	177	59	514	525
Chile	65	30	45	42	120	44	59	71
Paraguay	n.a.	n.a.	—	—	n.a.	n.a.	19	18
Peru	22	20	46	46	47	21	60	56
Uruguay	72	72	221	207	83	n.a.	n.a.	216
United Kingdom	*748*	*2,877*	*2,200*[5]	*1,500*[5]	*748*	*2,877*[6]	*2,374*	*1,958*
Other Sterling Countries[7]	*585*	*535*	*627*	*620*	*754*[2]	*1,170*[2]	*5,055*	*4,400*[2]
Australia	109	6	112	113	200	251	1,219	979
Burma	...[8]	...[8]	—	—	...[8]	...[8]	159	n.a.
Ceylon	...[8]	...[8]	—	—	...[8]	...[8]	218	163
Iceland	1	1	1	1	n.a.	1	9	9
India	202[9]	274[9]	247	247	440[9]	485[9]	1,888	1,729
Iraq	n.a.	—	—	—	n.a.	22	114	129
Ireland	n.a.	10	18	18	n.a.	59	206	219
New Zealand	35	23	32	33	35	43	217	183
Pakistan	...[8]	...[8]	27	38	...[8]	...[8]	639	n.a.
Union of South Africa	39	220	190	170	78	259	386	382

	1928	1938	1951	1952	1928	1938	1951	1952
Union of South Africa	39	220	190	170				

TABLE 1—*Continued*

	Gold[9]				Gold plus Foreign Exchange[9]			
	1928	1938	1951	1952	1928	1938	1951	1952
Continental EPU Countries	*2,785*[3]	*6,060*[3]	*4,010*[3]	*4,485*[3]	*5,000*[3]	*6,500*[3]	*7,045*[3]	*7,935*[3]
Austria	24	...[10]	n.a.	n.a.	126	...[10]	n.a.	n.a.
Belgium-Luxembourg	128	780	635	704	207	780	1,054	1,077
Denmark	46	53	31	31	77	77	118	142
France	1,254	2,757	548[11]	573[11]	2,541	2,791	800	676
Germany[12]	650	n.a.	28	140	776	n.a.	503	1,165
Greece	7	27	4	10	55	n.a.	n.a.	n.a.
Italy	266	193	333	n.a.	583	201	1,045	913
Netherlands	175	998	316	544	263	1,037	552	936
Norway	39	84	50	50	50	134	151	151
Portugal	9	86	264	286	25	n.a.	n.a.	n.a.
Sweden	63	321	152	184	121	520	484	446
Switzerland	103	701	1,452	1,422	152	764	1,594	1,648
Turkey	21	29	151	143	21	34	217	191
Other	*1,060*[3]	*945*[3]	*950*[3]	*920*[3]	*1,400*[3]	*1,395*[3]	*3,665*[3]	*3,350*[3]
Egypt	18	55	174	174	178	175	957	753
Finland	8	26	26	26	27	75	216	163
Indonesia	n.a.	80	280	235	n.a.	n.a.	511	314
Iran	n.a.	26	138	138	n.a.	38	190	177
Israel[13]	n.a.	—	—	—	n.a.	32	19	n.a.
Japan	541	230	n.a.	n.a.	598	289	n.a.	n.a.
Lebanon[14]	...	...	26	31	...	...	40	42
Philippines	n.a.	n.a.	7	9	50	n.a.	246	227
Spain	494	525	51	51	512	n.a.	n.a.	n.a.
Syria	n.a.	n.a.	11	14	n.a.	n.a.	33	38
Thailand	n.a.	—	113	113	43	56	358	349

TABLE 1—*Continued*

	Gold[2]				Gold plus Foreign Exchange[2]			
	1928	1938	1951	1952	1928	1938	1951	1952
International Agencies								
IMF	...[15]	...[15]	1,530	1,692	...[15]	...[15]	7,261	7,374
EPU	...[15]	...[15]	65	159	...[15]	...[15]	68	225
BIS	...[15]	14	115	196	...[15]	14[6]	283	442
Total, including international agencies and United States	*9,800*[3]	*25,900*[3]	*35,150*[3]	*35,500*[3]	*12,900*[3]	*27,600*[3]	*53,450*[3]	*53,800*[3]
Total, excluding international agencies and United States	*6,050*[3]	*11,300*[3]	*10,600*[3]	*10,200*[3]	*9,150*[3]	*13,000*[3]	*22,950*[3]	*22,500*[3]

[1] Data are as of end of year. Countries of the Soviet bloc and dependent territories of the United Kingdom and of continental EPU countries are excluded; see text. Totals and subtotals include estimated data for those countries for which definite totals are not available (marked n.a. in table). Dashes indicate less than $500,000.

[2] Gold valued at $20.67 per ounce in 1928, and $35.00 per ounce in 1938, 1951, and 1952.

[3] Estimated.

[4] Covers Costa Rica, Haiti, Honduras, Nicaragua, and Panama.

[5] Estimates of the U. S. Treasury and Board of Governors of the Federal Reserve System.

[6] Gold only.

[7] The total reserves of "Other Sterling Countries" cannot be added to those of the United Kingdom in order to obtain a meaningful aggregate for the total sterling area, as the reserves of the "Other Sterling Countries" are comprised largely of items which are, in turn, liabilities of the United Kingdom.

[8] Included with India.

[9] Undivided India.

[10] Part of Germany

[11] Central bank holdings only.

[12] Undivided Germany, 1928 and 1938; Federal Republic of Germany, 1951 and 1952.

[13] Data for 1928 and 1938 refer to Palestine.

[14] Included with Syria in 1928 and 1938.

[15] Agency not yet established.

Sources: For 1928, United Nations, *Statistical Yearbook, 1948*, and League of Nations, *International Currency Experience* (1944); for 1938, 1951, and 1952, International Monetary Fund, *International Financial Statistics*, July 1953, and data supplied by the Statistics Division, Research Department, International Monetary Fund.

This "double counting" is important only for the United States and the United Kingdom, as dollars and sterling are the only currencies that other countries hold in substantial amounts as monetary reserves. The double counting results in overstating the reserve position of the United States, as the $10.5 billion of short-term liabilities to foreigners (including international institutions) outstanding on December 31, 1952 constituted, in an important sense, a first claim on the U.S. gold reserve of $23.3 billion on that same date.[4] A good part of these foreign claims are required as working balances, however, and, in any event, the reserve and payments positions of the United States are so strong that there is no practical difficulty in treating its reserve position on a gross basis. The case of the United Kingdom is rather different. The external sterling liabilities of the United Kingdom, counted as reserves by others, substantially exceed its own reserves. Its real reserve position, therefore, is not nearly so strong as might be inferred from the gross figures given in this table. Furthermore, no meaningful figure can be obtained by adding the total reserves of the United Kingdom and those of other sterling countries to obtain a "sterling area total", since the major portion of the reserves of the other sterling countries are comprised of liabilities of the United Kingdom. The amount of double counting in the table as a whole is, of course, substantially reduced by the omission of reserve statistics for the dependent territories of the United Kingdom and of the continental EPU countries.

Table 2 shows total imports on a c.i.f. basis for the countries for which reserve data are shown in Table 1. As in Table 1, members of the Soviet bloc and dependent territories of the United Kingdom and of the continental EPU countries are omitted. Table 3 shows the relationship which the official gold reserves and the total official reserves, respectively, of each country bore to its total c.i.f. imports in each of the reference years.

The relationship of reserves to imports serves as a common denominator on the basis of which reserves can be compared. It is the most comprehensive basis found practical to use in the general statistical comparisons in this paper. Strictly speaking, the most general basis for such comparisons would be total current account expenditures, but data on such expenditures are not available for many of the countries for many of the years. The necessary omission of invisible items has been repaired in part, however, by placing imports on a c.i.f. basis. The imports of each country are those from all other countries, including those from the country's own overseas dependencies. It is true that imports into metropolitan countries from their own overseas dependencies may often be financed in ways that do not place a strain on metropolitan reserves.

[4] The corresponding figures for December 31, 1951 are $22.9 billion for the gold reserve and $9.3 billion for total short-term liabilities to foreigners including international institutions.

TABLE 2. MERCHANDISE IMPORTS, C.I.F., BY COUNTRIES[1]

(In millions of U.S. dollars)

	1928	1938	1951	1952
United States	*4,427*	*2,485*	*11,946*	*11,633*
Canada	*1,364*	*763*	*4,195*	*4,458*
Latin American Republics	*2,453*	*1,535*	*7,619*	*7,074*
Dollar countries	862	568	3,272	3,280
Bolivia	23	25	91	74[2]
Colombia	161	89	416	402
Cuba	234	119	691	667
Dominican Republic	30	13	64	63
Ecuador	16	12	64	65
El Salvador	18	9	62	68
Guatemala	31	21	81	76
Mexico	185	114	823	739
Venezuela	81	107	719	809
Other[3]	83	59	261	317
Non-dollar countries	1,591	967	4,347	3,794
Argentina	807	440	1,400[2]	860[2]
Brazil	441	295	2,011	2,010
Chile	163	103	329	371
Paraguay	13	9	30[2]	...[4]
Peru	70	58	261	288
Uruguay	97	62	316	237
United Kingdom	*5,795*	*4,600*	*10,942*	*9,747*
Other Sterling Countries	*2,670*	*2,299*	*8,054*	*7,554*
Australia	669[5]	571[5]	2,423	1,979
Burma	75[6]	79[7]	137	192
Ceylon	139	86	327	358
Iceland	17	11	57	56
India	837[6,8]	575[6,8]	1,816	1,672
Iraq	34	46	143	173
Ireland	288	203	573	482
New Zealand	218	225	596	739
Pakistan	...[9]	...[9]	534	609
Union of South Africa	393	503	1,448	1,294
Continental EPU Countries	*11,103*	*7,804*	*22,168*	*21,910*
Austria	456	...[10]	657	654
Belgium-Luxembourg	889	765	2,535	2,424
Denmark	441	354	1,013	962
France	2,097	1,324	4,551	4,431

TABLE 2, *cont.* MERCHANDISE IMPORTS, C.I.F., BY COUNTRIES[1]
(In millions of U.S. dollars)

	1928	1938	1951	1952
Continental EPU Countries, *cont.*				
Germany[11]	3,335	2,430	3,494	3,818
Greece	161	131	435	346
Italy	1,173	593	2,167	2,313
Netherlands	1,078	803	2,567	2,251
Norway	269	292	877	873
Portugal	120	102	330	350
Sweden	458	520	1,776	1,730
Switzerland	512	366	1,364	1,202
Turkey	114	119	402	556
Other	*2,813*	*1,935*	*6,204*	*6,550*
Egypt	249	185	667	608
Finland	202	182	676	792
Indonesia	403	275	805	972
Iran	76[12]	79[12]	248	165
Israel[13]	33	56	343	...[4]
Japan	990	759	1,995	2,028
Lebanon[14]	...	...	136	141
Philippines	149	153	539	477
Spain	580	...[4]	384	518
Syria	51	37	139	143
Thailand	80	57	272[2]	301[2]
Total, including United States	*30,625*	*21,401*	*71,128*	*68,926*
Total, excluding United States	*26,198*	*18,936*	*59,182*	*57,293*

[1] Countries of the Soviet bloc and dependent territories of the United Kingdom and of continental EPU countries are excluded; see text.
[2] Partly estimated.
[3] Covers Costa Rica, Haiti, Honduras, Nicaragua, and Panama.
[4] Estimate included in totals and subtotals.
[5] Year ending June.
[6] Year beginning April.
[7] Year ending September.
[8] Undivided India.
[9] Included with India.
[10] Included with Germany.
[11] Undivided Germany, 1928 and 1938; Federal Republic of Germany, 1951 and 1952.
[12] Year beginning June 21.
[13] Data for 1928 and 1938 refer to Palestine.
[14] Included with Syria in 1928 and 1938.

Sources: For 1928, League of Nations, *Network of World Trade* (1942); for 1938, 1951, and 1952, International Monetary Fund, *International Financial Statistics*, July 1953.

TABLE 3. RATIOS OF OFFICIAL RESERVES TO TOTAL MERCHANDISE IMPORTS, C.I.F., BY COUNTRIES[1]

(In per cent)

	Ratio of Gold Reserves to Imports				Ratio of Gold plus Foreign Exchange Reserves to Imports			
	1928	1938	1951	1952	1928	1938	1951	1952
United States	*85*	*592*	*191*	*202*	*85*	*592*	*191*	*202*
Canada	*7*	*24*	*20*	*20*	*7*	*29*	*43*	*42*
Latin American Republics	*40*	*45*	*26*	*26*	*47*	*51*	*40*	*43*
Dollar countries	8	23	32	28	15	29	47	49
Bolivia	39	12	25	31	39	20	35	38
Colombia	15	27	12	—	39	33	30	38
Cuba	—	1	45	32	—	2	72	69
Dominican Republic	—	—	19	19	—	31	47	51
Ecuador	6	25	34	35	50	33	48	68
El Salvador	28	78	42	43	28	89	68	65
Guatemala	6	33	33	36	16	43	49	57
Mexico	3	25	25	19	5	37	33	37
Venezuela	26	—	52	46	26	—	52	54
Other[2]	—	2	3	3	—	8	38	35
Non-dollar countries	58	58	21	23	65	65	34	37
Argentina	75	—	19	—	75	—	—	—
Brazil	34	11	16	16	40	20	26	26
Chile	40	29	14	11	74	43	18	19
Paraguay	—	—	—	—	—	—	63	—
Peru	31	34	18	16	67	36	23	19
Uruguay	74	116	70	87	86	—	—	91
United Kingdom	*13*	*63*	*20*	*15*	*13*	*63*	*22*	*20*
Other Sterling Countries	*14*	*23*	*8*	*8*	*28*	*51*	*63*	*58*
Australia	16	1	5	6	30	44	50	49
Burma	—	—	—	—	—	—	116	—
Ceylon	—	—	—	—	—	—	67	46
Iceland	6	9	2	2	—	9	16	16
India	24	48	14	15	53	84	104	103
Iraq	—	—	—	—	—	48	80	75
Ireland	—	5	3	4	—	29	36	45
New Zealand	16	10	5	4	16	19	36	25
Pakistan	—	—	5	6	—	—	120	—
Union of South Africa	10	44	13	13	20	51	27	30

TABLE 3, *cont.* RATIOS OF OFFICIAL RESERVES TO TOTAL MERCHANDISE IMPORTS, C.I.F., BY COUNTRIES[1]

(In per cent)

	Ratio of Gold Reserves to Imports				Ratio of Gold plus Foreign Exchange Reserves to Imports			
	1928	1938	1951	1952	1928	1938	1951	1952
Continental EPU Countries	*25*	*78*	*18*	*20*	*45*	*83*	*32*	*36*
Austria	5	—	—	—	28	—	—	—
Belgium-Luxembourg	14	102	25	29	23	102	42	44
Denmark	10	15	3	3	17	22	12	15
France	60	208	12	13	121	211	18	15
Germany	19	—	1	4	23	—	14	24
Greece	4	21	1	3	34	—	—	—
Italy	23	33	15	—	50	34	48	39
Netherlands	16	124	12	24	24	129	22	42
Norway	14	29	6	6	19	46	17	17
Portugal	8	84	80	82	21	—	—	—
Sweden	14	62	9	11	26	100	27	26
Switzerland	20	192	106	118	30	209	117	137
Turkey	18	24	38	26	18	29	54	34
Other	*38*	*49*	*15*	*14*	*50*	*73*	*59*	*40*
Egypt	7	30	26	29	71	95	143	124
Finland	4	14	4	3	13	41	32	21
Indonesia	—	29	35	24	—	—	63	32
Iran	—	33	56	84	—	48	77	107
Israel	—	—	—	—	—	57	6	—
Japan	55	30	—	—	60	38	—	—
Lebanon	—	—	19	22	—	—	29	30
Philippines	—	—	1	2	34	—	46	48
Spain	85	—	13	10	88	—	—	—
Syria	—	—	8	10	—	—	24	27
Thailand	—	—	42	38	54	98	132	116
Total, including gold and reserves of international agencies, and gold and reserves *and* imports of the United States	*32*	*121*	*49*	*52*	*42*	*129*	*75*	*78*
Total, excluding gold and reserves of international agencies, and gold and reserves *and* imports of the United States	*23*	*60*	*18*	*17*	*35*	*69*	*39*	*40*

[1] Based on data in Tables 1 and 2. Dashes indicate less than one half of 1 per cent or nonavailability of data.

[2] Covers Costa Rica, Haiti, Honduras, Nicaragua, and Panama.

The metropolitan country usually has a corresponding obligation, however, to assist in financing imports into the dependent territories from the outside world. These imports (like all other imports of the dependent territories) are omitted from the statistics, and may be considered as at least a partial offset to the inclusion of imports into the metropolitan countries from their dependent territories.

In any event, it should be emphasized that, whatever might be the character of the denominators by which the reserves of different countries were divided to place them on a comparable basis, they would not provide ready-made comparisons of reserve adequacy. The reserve figures themselves make no allowance for penumbral reserve items; and, were such allowances made, they would merely provide the starting point for the application of the various criteria of adequacy discussed earlier in this paper. This is brought out dramatically by the incongruity between the import-reserve percentages for a number of the countries in the tables and the generally accepted evaluations of the over-all reserve positions of these countries based upon the size of their reserves and all of the factors affecting reserve adequacy.

Table 1 does not distinguish between the convertible and inconvertible currency holdings of the International Monetary Fund. It is helpful, therefore, to say that the Fund's total holdings of gold and U.S. and Canadian dollars amounted to $3.1 billion at the end of 1951 and were equal to about 5 per cent of 1951 c.i.f. imports of all the countries included in the table, exclusive of the United States. By the end of 1952, the Fund's holdings of gold and U.S. and Candian dollars had risen to $3.2 billion (6 per cent of 1952 c.i.f. imports).

As stated previously, no comprehensive data are available separating foreign exchange reserves into those held in convertible and in inconvertible currencies. It is of interest, however, to present such data as are available with respect to reserve holdings of the major convertible currency—the U.S. dollar. These data are available from reports made to the U.S. Treasury by U.S. banks. They show that, for the world as a whole, holdings of U.S. dollars by official monetary authorities (excluding international agencies) amounted to $4.1 billion at the end of 1951 and to $5.1 billion at the end of 1952.[5] Data for official holdings only are not available for individual countries. In order to preserve the confidential character of the balances of individual foreign institutions, these data are published by the U.S. Treasury on a country basis only as a total of official and bank holdings of dollars. The total amount of such holdings (excluding international agencies) amounted to $6.0 billion at

[5] In each case reported official holdings of U.S. dollars by Japan are added to the total reported by the U.S. Treasury. See Appendix, p. 226.

the end of 1951 and to $6.6 billion at the end of 1952, and so exceeded by a considerable margin holdings of monetary authorities only.

For the various countries, the available data for holdings of gold and U.S. dollars by foreign monetary authorities and banks in 1951 and 1952, and the ratios of these data to the figures shown in Table 2 for the c.i.f. imports of each country, are given in Table 4. The comparisons here differ, of course, from those made earlier in this chapter in that they exclude holdings of all types of reserves other than gold and U.S. dollars and include holdings by banks as well as by monetary authorities.

Comparisons of Reserve Adequacy

To the preceding discussion of the factors affecting the need for reserves at any time and the statistics of actual reserve holdings in 1928, 1938, 1951, and 1952, it may be helpful to add a brief consideration of some changes in the need for reserves during the past few decades.

Reserve adequacy in 1928

Reserves in 1928 were adequate to support multilateral trade in the prosperous conditions prevailing at the time. It is futile to consider whether they would have continued to be adequate to support the newly established gold standard indefinitely through mild ups and downs in business conditions in the absence of deep depression. The fact is that the depression of the early thirties, spreading chiefly from the United States, but also from other leading industrial countries, placed the reserves of many countries, especially raw material countries, under great strain. At the same time, the loss of confidence in the exchange rates of the currencies of the reserve holding countries, especially the United Kingdom (due in part to inadequacies in their reserves), caused runs on these countries which induced them to contract their own credits, and so reduced the total amount of reserves available to other countries. A shortage of reserves was certainly not the principal cause of the depression of the thirties, but it did contribute to the scope, intensity, and duration of the depression because of the severe restrictions on trade and even because of the general deflationary policies that were instituted to protect reserves.

Effect of the low level of world trade on reserve adequacy in 1938

The situation in 1938 was quite different. The amount of reserves then available was doubtless adequate in the sense that a shortage of reserves was not the bottleneck restraining an expansion of trade, and

TABLE 4. OFFICIAL AND BANK HOLDINGS OF GOLD AND U.S. DOLLARS AND THEIR RATIO TO TOTAL MERCHANDISE IMPORTS, C.I.F., BY COUNTRIES, EXCLUDING THE UNITED STATES

	Official and Bank Holdings of Gold and U. S. Dollars[1] (*million dollars*)		Ratio to Imports (*per cent*)	
	1951	1952	1951	1952
Canada	*1,953*	*2,047*	*47*	*46*
Latin American Republics	*2,838*	*2,755*	*37*	*39*
Dollar countries	1,585	1,631	48	50
Bolivia	40	37	44	50
Colombia	132	160[2]	32	40
Cuba	518	455	75	68
Dominican Republic	42	42	66	67
Ecuador	33[3]	47[3]	52	72
El Salvador	44	44	71	65
Guatemala	40	43	49	57
Mexico	294	283	36	38
Venezuela	399	465	55	57
Other[4]	43[3]	55[3]	16	17
Non-dollar countries	1,253	1,124	29	30
Argentina	482	370[2]	34	43
Brazil	377	352	19	18
Chile	71	92	22	25
Paraguay	5[3]	5[3]	17	18
Peru	70	70	27	24
Uruguay	248	235	78	99
United Kingdom	*2,530*	*2,027*	*23*	*21*
Other Sterling Countries	*798*	*810*	*10*	*11*
Australia	151	157	6	8
Ceylon	19[3]	14[3]	6	4
Iceland	5[3]	5[3]	9	9
India	305	308	17	18
Iraq	13[3]	14[3]	9	8
Ireland	34[3]	34[3]	6	7
New Zealand	37[3]	36[3]	6	5
Pakistan	40[3]	52[3]	7	9
Union of South Africa	194	190	13	15
Continental EPU Countries	*5,817*	*6,753*	*26*	*31*
Austria	102[2]	142[2]	16	22
Belgium-Luxembourg	715[5]	771[5]	28	32
Denmark	69	92	7	10
France	765	855	17	19

TABLE 4, *cont.* OFFICIAL AND BANK HOLDINGS OF GOLD AND U.S. DOLLARS AND THEIR RATIO TO TOTAL MERCHANDISE IMPORTS, C.I.F., BY COUNTRIES, EXCLUDING THE UNITED STATES

	Official and Bank Holdings of Gold and U.S. Dollars[1] (*million dollars*)		Ratio to Imports (*per cent*)	
	1951	1952	1951	1952
Continental EPU Countries, *cont.*				
Germany	431	688	12	18
Greece	43	48	10	14
Italy	599	620[2]	28	27
Netherlands	443	726	17	32
Norway	126	138	14	16
Portugal	295	329	89	94
Sweden	218	268	12	15
Switzerland	1,851	1,929	136	160
Turkey	160	147	40	26
Other	*2,286*	*2,393*	*37*	*37*
Egypt	281	230	42	38
Finland	52	52	8	7
Indonesia	420	295	52	30
Iran	157	150	63	91
Israel	24	16	7	4
Japan	710[2]	920[2]	36	45
Lebanon	41	50[3]	30	35
Philippines	318	304	59	64
Spain	60	61	16	12
Syria	16	25[3]	12	17
Thailand	207	290	76	96
International Agencies				
IMF	2,854	2,980	—	—
EPU	68	226	—	—
BIS	283[4]	442[4]	—	—
Total, incl. international agencies	*19,427*	*20,433*	*33*	*36*
Total, excl. international agencies	*16,222*	*16,785*	*27*	*29*

[1] Data as of end of year.
[2] Partly estimated.
[3] Includes other than official and bank holdings.
[4] Covers Costa Rica, Haiti, Honduras, Nicaragua, and Panama.
[5] Belgian official and bank holdings; Luxembourg includes other than official and bank holdings.
[6] Includes currencies other than dollars.

Sources: Holdings of U.S. dollars are from U.S. Treasury Department, *Treasury Bulletin*, April 1952, May 1952, April 1953, and May 1953. For other sources used, see Tables 1 and 2.

probably would not have become one even if trade had expanded considerably. (Many countries—e.g., Germany, Japan, and some countries in eastern Europe, as well as some raw material producing countries—doubtless had inadequate reserves, but these countries were pursuing policies with respect to the disposition of their real resources which would have quickly dissipated some of their reserves even if somehow they had been made adequate.) It is probable that reserves in 1938 would have been adequate even if the total amount of world trade at that time had been at a volume corresponding to high level employment in, and the pursuit of liberal trade policies by, all or most trading countries. The important point is that the adequacy of 1938 reserves should be judged, not relative to actual 1938 trade but relative to the total amount of trade which would have been carried on under liberal trade policies and at a high level of employment. It follows that the shrinkage in the apparent adequacy of reserves relative to trade between 1938 and 1951 is not nearly so great as appears from the foregoing tables. This is true because the basis of comparison in one case is a volume of trade greatly shrunken by depression, and in the other case it is a volume which, despite illiberal trade policies, was at a high level.

Changes in the volatility of world trade

As pointed out previously, one of the principal factors affecting the need for reserves is the prospect of swings in the volume and prices of a country's imports and exports. The possibility of a downward swing in the demand for a country's exports increases its need for reserves and makes any given reserve holding less adequate.

There is some reason to believe that world trade is more volatile and the exports of most countries more vulnerable to sharp downward swings now than was the case in 1938. Before the war, economic conditions in the United States were generally subject to greater variation than those in most industrial countries. If this tendency should reappear in the postwar period (it has not thus far), an increase in the U.S. share of world trade would increase its over-all volatility. The ratio of U.S. imports (c.i.f.) to world imports decreased from 13 per cent in 1928 to 10 per cent in 1938, but again increased to 15 per cent in 1951 and 1952. It is possible, therefore, that the exports of other countries are somewhat more subject to sharp declines now than they were in 1938. Moreover, a larger proportion of the imports of the United States now consists of raw materials which are also produced in large volume in the United States, either directly or in the form of acceptable synthetic substitutes. The imported portion of these materials—copper and natural rubber are cases in point—represents a marginal supply which would be subject to sharp curtailment in the event of a U.S. recession. It appears,

therefore, that, as far as trade factors are concerned, a larger amount of reserves relative to trade may be necessary now than would have been the case in 1938, in order to provide the same degree of relative adequacy.

Relationship of the Payments and Reserves Problems in the Postwar Period

The problem of assisting deficit countries to finance long-continuing, and possibly fundamental, disequilibria in their balances of payments is conceptually separate from the problem of building up their monetary reserves. The reserves problem of any country cannot be approached until its payments problem has been brought under control. But, in the last analysis, the funds obtained by each country are directly or indirectly transferable between the two uses, and the real character of any operation can be determined only *ex post*, after a study of the recipient countries' reserve and payments positions.

Viewed in this light, it is seen that the funds obtained by each country since the war (or during any other period) may be considered as interim installments toward its combined payments-reserves problem, with the final apportionment depending upon the policies of the country and the forces with which it has to contend.

As shown in Table 5, during the period 1946 to 1952, inclusive, the United States supplied the "rest of the world" with $125.9 billion, of which $89.9 billion was either earned or obtained through private donations or private capital movements, and $36 billion was obtained through official grants and loans from the U.S. Government and international agencies. Uses of dollars during this period totaled $129.2 billion, leaving a deficiency of $3.3 billion which was made up by a net transfer of reserves to the United States.[6] Gold production outside the United States during the same period totaled a little over $5 billion, which would have more than restored the reserves of the "rest of the world" to their original amount if it had all been added to monetary stocks—which, of course, was not the case.

During each of the past three years, the "rest of the world" has gained reserves from the United States, the amount being substantial in 1950. The proportion of the total dollar supply coming from official grants and loans (including military aid) has varied between 21 per cent and 24 per cent in the three-year period. During 1952, the total dollar supply exceeded the use of dollars by $0.8 billion (the net outflow of reserves

[6] The figures in Table 5 are obtained by reversing the signs on the data for the balance of payments of the United States, published in International Monetary Fund, *Balance of Payments Yearbook*. The item "net errors and omissions" has been classified for this purpose as a "use" of funds by the "rest of the world" on the ground that such errors and omissions probably represent, for the most part, unrecorded private capital movements to the United States.

TABLE 5. SOURCES AND USES OF U.S. DOLLARS BY THE REST OF THE WORLD, 1946–52[1]

(In billions of U.S. dollars, except for Col. 5)

	Sources						Uses				Net Movements in Reserves (Col. 6 minus Col. 10)
	Exports to U.S.	Services	Private donations and capital movements	Official grants and loans: Amount	Official grants and loans: Per cent of total sources	Total sources	Imports from U.S.	Services	Net errors and omissions	Total uses	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1946	5.1	2.2	1.2	5.2	38	13.7	10.2	5.0	0.2	15.4	−1.6
1947	6.1	2.4	1.9	6.0	37	16.4	15.1	5.0	1.0	21.2	−4.8
1948	7.8	2.8	2.1	5.2	29	17.8	13.1	4.6	1.0	18.7	−0.9
1949	7.0	2.8	1.5	5.8	34	17.2	12.3	4.2	0.8	17.2	—[2]
1950	9.3	3.1	1.6	4.2	23	18.2	10.6	4.2	0.2	15.0	+3.2
1951	11.7	3.6	1.2	4.4	21	20.9	15.5	4.7	0.6	20.8	—[2]
1952	11.5	4.2	0.8	5.2	24	21.7	15.9	4.8	0.2	20.9	+0.8
Total	58.5	21.1	10.3	36.0	29	125.9	92.7	32.5	4.0	129.2	−3.3

[1] Totals and computations are based on unrounded figures.

[2] Less than $50 million.

Sources: 1946–51 data based on International Monetary Fund, *Balance of Payments Yearbook, 1948, 1949–50,* and *1950–51*; 1952 data are estimated.

from the United States). Official grants and loans (including military aid) totaled $5.2 billion and accounted for about 24 per cent of the total dollar supply of $21.7 billion in that year.

Military aid, which comprised a very small proportion of total official grants and loans prior to 1950, has increased rapidly since then, as shown in Table 6. In 1952, military aid comprised half of all official

TABLE 6. OFFICIAL GRANTS AND LOANS BY THE UNITED STATES TO THE REST OF THE WORLD, 1946–52[1]

	Military Aid	Other	Total	Military Aid	Other	Total
	←(billion dollars)→			(per cent of total dollar supply)		
1946	—	5.2	5.2	—	38	38
1947	0.1	5.9	6.0	1	36	37
1948	0.4	4.8	5.2	2	27	29
1949	0.2	5.6	5.8	1	33	34
1950	0.6	3.6	4.2	3	20	23
1951	1.5	2.9	4.4	7	14	21
1952	2.6	2.6	5.2	12	12	24

[1] For sources, see Table 5.

grants and loans of U.S. dollars. As suggested earlier in this paper, military aid, when considered as a means of financing the costs of a mutually shared defense system, may be viewed by the recipient countries in the same category as other current balance of payments receipts, rather than as a means of financing a deficit.

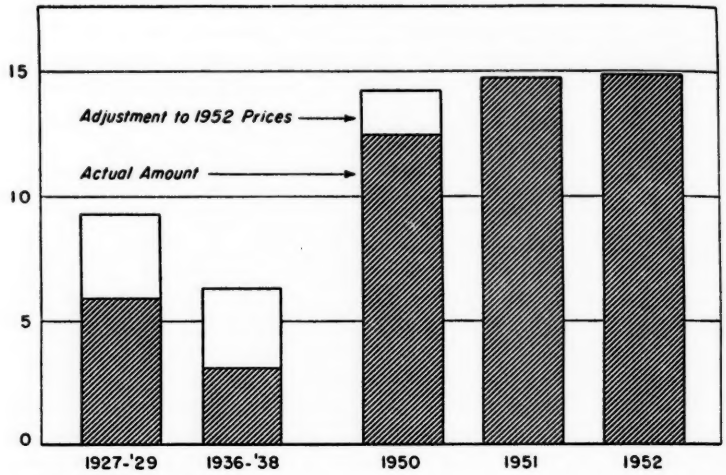
The significance of any given supply of dollars must, of course, be judged relative to the total needs which must be met and the purchasing power of each dollar. The dollar supply in 1952, exclusive of movements in reserves and of official grants and loans, and after subtracting an amount equal to the net investment income of the United States,[7] was higher—both in real and in monetary terms—than it had been in any previous year. In real terms it was slightly greater than in 1950 and 1951, more than twice the amount in the thirties, and 60 per cent higher than in the twenties (see Chart 1 and Table 7). The dollars furnished by official grants and loans (including military aid) are in addition to this large supply from traditional sources. While the need for dollars has also increased since the twenties and the thirties, these figures make the dollar shortage seem much less hopeless than is sometimes assumed.

The additional supply of dollars which has been furnished by official grants and loans has been an active factor in increasing the demand for dollars during the postwar period. This was, in part, inevitable, as an

[7] This subtraction is made in order to show the amount of dollars at the "free" disposal of the recipient countries after paying interest, dividends, etc., to the United States.

CHART 1. ANNUAL DOLLAR SUPPLY[1]

(In billions of U.S. dollars)



[1] See Table 7 and text.

increase in the flow of dollars naturally relaxed the policies of the recipient countries and so caused them to make expenditures which they would otherwise have averted, although only at the cost of much hardship and political instability. It is also unlikely that so many dollars would have been furnished by the United States had a large portion of them been added to reserves. Indeed, most of the additional dollar expenditure was *planned* at the direct request of the United States, since one of the avowed purposes of the Marshall Plan was to stimulate in-

TABLE 7. ANNUAL DOLLAR SUPPLY IN CURRENT AND 1952 DOLLARS[1]

(In billions of U.S. dollars)

	1927–29 Average	1936–38 Average	1950	1951	1952
Actual amount	5.9	3.1	12.4	14.7	14.8
Amount adjusted to 1952 prices	9.3	6.3	14.2	14.7	14.8

[1] Excludes all dollars supplied by official financing and by movements of reserves; also excludes an amount of dollars supplied by other sources equal to the net investment income of the United States in each year. The adjustment to 1952 prices is made on the basis of the U.S. export price index. The data have been compiled by the International Monetary Fund.

vestment in the recipient countries and thus strengthen their balance of payments positions in the long run. It would not be true, therefore, to say that the funds received from the United States in the form of official grants and loans could have been added to reserves, even in large part, had the recipient countries adopted more rigorous policies. But the grants and loans did avert what might otherwise have been a disastrous run on reserves and contributed in some degree to an actual increase.

Conclusion

The preceding discussion has stressed three points which must be taken into account in any discussion of the adequacy of monetary reserves:

(1) Monetary reserves are meant to take care of swings between favorable and unfavorable payments positions. They are meant to cover recurrent balance of payments deficits that are temporary in character. No amount of monetary reserves is sufficient to finance a permanent disequilibrium in a country's balance of payments.

(2) The magnitude of the monetary reserves of a given country tends both to affect and to be affected by that country's domestic fiscal and monetary policies. The interaction between reserves and policies is stronger, the more important the role played by external trade in the economy of the country concerned. Rigorous fiscal and monetary policies tend to increase monetary reserves; strong reserve positions make the relaxation of fiscal and monetary policies possible. When world inflationary and world deflationary forces are in balance, this interaction is beneficial and helps both to promote sound policies and to achieve and maintain a viable distribution of monetary reserves throughout the trading world. When world inflationary forces are in the ascendancy, substantial accretions to world monetary reserves tend, through their interactions with policy, to increase these forces yet further; when world deflationary forces are in the ascendancy, substantial accretions to world monetary reserves tend to offset these forces. The foregoing should not be taken to imply that increases in reserves are *per se* undesirable even during periods of world inflation. Countries should be on guard in such situations, however, against relaxing their fiscal and monetary policies so far as to intensify domestic inflationary pressures.

(3) A world-wide distribution of monetary reserves in accordance with the apparent need for them is incompatible with the yet more fundamental consideration of the distribution of the real resources of each country in accordance with the highest priority for their use. If the monetary reserves of the world were completely redistributed in accordance with apparent need, they would soon be re-redistributed, as each country would soon (quite properly) rearrange the changed amount of

real resources at its disposal in accordance with its scale of preferences. In such a re-redistribution, wealthy or less dynamic countries would soon reacquire reserves which they either desired or merely accepted passively, but which, in any event, they could hold without sacrificing other deeply felt needs, while poorer or more dynamic countries would soon dispose of part of their newly acquired reserves in exchange for other types of real resources which they needed more urgently.

It is a corollary of the first of these points that the subject of reserve adequacy can be discussed meaningfully only on the assumption that countries which have not already done so adopt policies adequate to balance their accounts over a normal economic cycle. Upon the assumption that countries adopt such policies, the following four categories or standards of reserve adequacy were distinguished earlier in this paper:

1. Enough to enable a country in bad years, by resort to restrictions, to maintain its external debt payments and to purchase the goods and services necessary to avoid hardship to its population or dislocation to its economy and the possible emergence of an exchange crisis, i.e., to permit a reasonable distribution over *time* of the payments which it can afford to make over the entire cycle;
2. Enough to maintain currency convertibility, barring a severe depression, but with occasional necessity to resort to trade and exchange restrictions for balance of payments purposes;
3. Enough to maintain currency convertibility, barring a severe depression, but without the necessity for occasional resort to trade and exchange restrictions;
4. Enough to maintain currency convertibility, even through severe depressions (but not through prolonged periods of international deflation such as occurred in the thirties), without either the necessity for occasional resort to trade and exchange restrictions or the necessity for resorting to domestic deflationary policies for the purpose of restraining imports, even if this involves a substantial drain on reserves.

The determination of the "adequacy" category into which any country falls, assuming that it meets the fundamental condition of payments balance over a normal cycle, is a matter of judgment. It is probable, however, that almost all countries, assuming the adoption of appropriate policies, would qualify for category 1, many would qualify for category 2, some would qualify for category 3, and a few would qualify for category 4.[8]

[8] International Monetary Fund, *Annual Report, 1952*, p. 6, states: "An aggravating factor in the recurrent balance of payments crises of the postwar years is the inadequacy of international reserves available to monetary authorities out-

In determining the adequacy category into which any country falls, account should be taken of the availability of the resources of the Fund to extend temporary assistance to member countries which have achieved a fundamental payments balance. The provision of funds for the objectives indicated above—i.e., the avoidance of sharp declines in imports not required by a country's fundamental payments position, the maintenance of currency convertibility, and the avoidance of restrictions—is in accordance with the purposes of the Fund. Assistance from the Fund in carrying out these purposes should, therefore, enable member countries to meet their reserve needs more effectively than would be possible on the basis of their own reserves alone. The role of the Fund in times of depression presents special problems which will now be considered.

Reserves for combating the spread of depression

None of the adequacy categories just discussed implies that a country would be able to endure a prolonged period of world deflation without the imposition of exchange restrictions implying at least a severe limitation on convertibility. However, as has already been suggested, this would scarcely be a fair test of reserve adequacy. Just as, at one end of the spectrum, the subject of reserve adequacy does not become relevant unless the country itself is pursuing appropriate policies, so, at the other end, no country can be expected to maintain reserves sufficient to sustain free and nondiscriminatory multilateral trade in the face of world-wide deflation.

The experts' report, *Measures for International Economic Stability*, assumes that protracted depressions will be avoided by appropriate domestic measures, but that the U.S. economy, even on the assumption of a fairly rigorous anti-deflationary policy, is subject to short, sharp shocks, during which the rest of the world would need substantial reserves in order to maintain domestic anti-deflationary policies and a volume of imports from the United States corresponding to such policies, and thereby prevent the spread of the depression. The experts estimate

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side the United States. Although the gold and dollar holdings of countries other than the United States have risen to some extent since 1938, the increase has not been in proportion to the expansion of world trade, and their value in real terms has been actually reduced by inflation. These trends, combined with the abnormally wide swings in balances of payments, have often produced situations in which reserves have appeared to be dangerously low. The attainment of any particular level or ratio of reserves is not by itself a guarantee against balance of payments crises; nevertheless, a more adequate cushion against balance of payments disturbances is clearly desirable so that more time may be available to make the necessary readjustments."

It should be noted that many of the countries to which reference was there made had not achieved a fundamental balance of payments equilibrium over a normal economic cycle. Each adequacy category used in this paper assumes that policies are always adequate to assure such a balance.

that, in the event of a depression in the United States lasting for two years from its inception to its conclusion and involving a fall in industrial production of the same relative magnitude as that which occurred in the depression of 1937–38, the rest of the world would need to draw on its reserves to the extent of $8 billion to maintain its commodity imports from the United States at the level of those in the first half of 1951. To this, the experts add another $2 billion to cover anticipated accompanying declines in invisible current account payments by the United States and in private long-term capital outflow from the United States, and come up with an estimate that a total drain of $10 billion on reserves would be necessary to prevent the spread of a depression of the assumed magnitude. There is some reason to suppose that the assumptions of the experts may be unduly pessimistic. But they will not be investigated here, as no quantitative criticism of them would alter the conclusion of this paper that reserves are not, in general, adequate for combating the spread of a severe depression.

There are two essential questions implicit in the experts' report: (1) What actions in the field of monetary reserves should be taken *now* to prevent the spread of future depressions? (2) What actions should be taken when and if a depression starts?

In regard to the first, it would appear desirable for countries to increase their reserves to the extent that is possible and consistent with a progressive relaxation of trade and exchange restrictions and the maintenance of internal financial stability.

When analysis shows clearly that a depression is developing, it should be dealt with promptly by measures directed toward the maintenance of an adequate level of effective demand. Demand should, of course, be maintained on both the national and the international level. The measures taken to assure its maintenance should be primarily positive, and not merely defensive, in character. The essentially defensive character of supplementary reserves obtained with firm assurances of repayment in the short-term or medium-term future has already been pointed out. Defensive measures are important, however; and, in order to prevent small depressions from growing into large ones, such supplementary reserves should be supplied early, on liberal terms, and in adequate amounts. In the event of a severe depression, additional means for maintaining demand at the international level might be required, and it may be expected that the Fund would consult with its members on the desirability of additions to its resources and would consider possible changes in its modes of operations to meet the emergent situation. But primary reliance for the avoidance and cure of depressions must be

placed upon appropriate measures at the national level, especially in industrial countries.[9]

[9] International Monetary Fund, *Annual Report, 1952*, pp. 45–46, states: "The Fund has also had under consideration the question of the part to be played by it in connection with the problems created by widespread recessions or depressions. The Articles of Agreement have entrusted to the Fund an important function in this field. The basic problem of depression cannot, however, be overcome by the availability of international short-term credit to be repaid in the next boom, whether this is credit from the Fund or from some other source. The cure for a depression will require national measures to maintain or stimulate effective demand, especially in the great industrial countries. It may take time, however, before these measures bring recovery. The Fund can assist members which in the meantime may be faced with serious balance of payments difficulties, and by so doing help to reduce the deflationary pressure on the world economy as a whole. A UN group of experts has recommended an enlargement of the Fund's resources so as to increase the effectiveness of its activities in such circumstances. The Fund has for some time had under consideration the question of increasing its members' quotas, having in mind such factors as the magnitude of possible balance of payments deficits in a depression and the fall in the purchasing power of money since 1946. It has, however, concluded that an increase in its resources is not a question for action at the present time. Its existing resources are by no means small as a source to finance cyclical balance of payments deficits. The Fund's resources, moreover, are secondary reserves and the ability of countries to maintain import demand in a depression will depend also on the size of their own reserves. It is important, therefore, that countries follow financial policies that will enable them to build up reserves in periods of prosperity which would provide a first cushion to absorb the shock of a recession."

Appendix

This Appendix reproduces in part an article by G. S. Dorrance and E. Hicks, "Gold and Foreign Exchange Statistics in IFS", in *International Financial Statistics*, June 1953, pp. vii–xii.

Problems of foreign exchange statistics

The statistics of foreign exchange are necessarily difficult to compile and difficult to use. Gold and foreign exchange statistics are intended to measure a country's international liquidity and hence its ability to finance temporary balance of payments reverses without recourse to either secondary deflation or quantitative restriction and to measure by their period-to-period changes the monetary effects of financing the balance of payments. The gold element of the total involves relatively few problems. In most countries gold is held entirely or predominantly by the monetary authorities, and measurement of their holdings provides an unambiguous statement of the gold holdings of the country. Gold is a single physical commodity whose quantity can be measured by weight and unambiguously valued in terms of U.S. dollars or in the currency of the holding country at its par rate of exchange. Lastly, the measurement of gold holdings does not ordinarily involve any problem of net or gross measurement.

The foreign exchange element of the total, on the contrary, involves many problems: Firstly, no completely satisfactory line can be drawn to separate foreign exchange from related items that also contribute to a country's inter-

national liquidity. Secondly, because foreign exchange is defined throughout *International Financial Statistics* as claims against foreigners rather than as claims in foreign currency, the foreign exchange holdings of one country are necessarily the foreign exchange liabilities of another, raising the problem of the extent to which foreign exchange liabilities are an offset to assets for a country, for an area, or for the world as a whole. Thirdly, the available international liquidity of a country is not limited to its holdings of foreign assets alone. International agencies, particularly the Fund and the EPU, provide additional sources of liquidity.

Foreign exchange and the similar items, other than gold, that make up a country's international liquidity might be grouped on at least three scales according to their usability. Foreign claims could be arrayed by *currency* from U.S. dollars at the top through the other convertible currencies and then through the inconvertible currencies in the order of their usefulness for meeting obligations in any country or in the country liable for the claim. The *holders* of foreign claims could be arrayed from the monetary authorities at the top through the other banks, other parts of the government, business, and individuals in the order in which their holdings might be thought to be available to the monetary authorities in times of need. Lastly, the *forms* that foreign claims take could be arrayed from currency and demand deposits at the top through other claims on banks, short-term claims on governments, commercial claims, long-term claims to money, equities, and so forth, in the order of their ability to be converted into currency or deposits rapidly and without risk of capital loss. The compilation of foreign exchange statistics involves selecting criteria for cutting these various scales, each at some point.

The statistics published in IFS result from cutting the three scales very unevenly, partly from choice, partly by following convention, and partly from the limitations of the available data. They include as foreign exchange claims in all *currencies*, whether convertible or inconvertible, and value each at its established parity. It would be very difficult to do otherwise since most reporting countries do not differentiate their holdings by currency. Moreover, sterling constitutes most of the inconvertible currency held as foreign exchange, and the nature of the restrictions imposed on sterling would make any classification into "available" and "non-available" most arbitrary. Nevertheless, the usefulness of the data is limited by the inclusion in a single total of currencies of all degrees of convertibility. The only *holders* included are the national monetary authorities. That is, the statistics include as foreign exchange only the holdings of central banks, stabilization funds, treasuries, and similar agencies, and exclude holdings of the other banks and of business and individuals. The choice of monetary policy or exchange restrictions as an alternative to the use of reserves lies with the monetary authorities, and it is their holdings that are primarily available for policy use. This restriction of the data may limit their usefulness since the larger the foreign exchange holdings of the other banks and of business and individuals throughout the world, the more the monetary authorities might be able to induce them to move in settlement of temporary imbalances through appropriate monetary policies. As regards the *form* of foreign claims, the statistics follow the traditional definition of foreign exchange except that they have been extended to include long-term foreign claims. If the holdings of the other banks or of business and individuals were included in the data, the inclusion of long-term foreign claims would not be reasonable. The monetary authorities, however, are not likely to hold long-term foreign securities solely for their income or solely for the prospect of their appreciation. It is mostly the sterling area countries whose central banks hold long-term foreign securities, and their holdings probably represent their decision to hold interest-bearing paper rather than non-interest-bearing deposits or low-interest-bearing treasury bills for some or all of their sterling which cannot be currently used. The inclusion of these investments is consistent with the inclusion of inconvertible currency holdings.

The second problem of foreign exchange statistics as a measure of a country's international liquidity involves the choice of net or gross statistics and the extent to which foreign exchange liabilities are an offset to foreign exchange assets. All

of the foreign exchange data in IFS are reported gross insofar as possible, and liability statistics (also gross) are given for the United States and the United Kingdom only. One holder's foreign exchange asset, however, is necessarily another's foreign exchange liability. The world as a whole can have no net foreign exchange holdings.

It might seem, therefore, that data on foreign exchange should be reported net, with each country's foreign exchange liabilities deducted from its foreign exchange assets and with a world total of zero. A number of considerations, however, indicate that it is preferable to define foreign exchange for statistical purposes as gross.

Statistically, gross figures are more easily handled whenever more than one classification is required (e.g., by currency and by holder) for the same reasons that make gross national product a more useful measurement than national income. Conceptually, as in the analysis of banking data generally, the importance lies in the gross magnitudes of the different liabilities and assets, many of which are similar (a 30-day Treasury bill on the asset side and its counterpart of demand deposits on the liability side) and all of which would always net to zero.

Moreover, there are important nonparallelisms in foreign exchange assets and liabilities arising from (a) the fact that, while there are many classes of holders and obligors, the statistics measure only the assets and liabilities of the monetary authorities, and (b) the fact that, while it is intended to define foreign exchange assets and liabilities as claims on or to foreigners, records of some holders and debtors in some countries probably measure instead claims and obligations in foreign currency.

Statistics covering the net asset and liability accounts of the monetary authorities would not be the most useful net figure for the monetary authorities. Their gross assets are the only one of six items (the assets and liabilities of the monetary authorities, the assets and liabilities of the other banks, and the assets and liabilities of business and individuals) over which they have control, but it is they who, in the absence of exchange restrictions, are responsible to see that the economy meets all its foreign liabilities, including those of the banks and of business and individuals. Most of a country's foreign liabilities are obligations in national currency. For the obligor, whether official or private, meeting national currency obligations to foreigners is no more difficult than making payments to residents. But the problem of converting all such payments into foreign exchange must be met by the monetary authorities. The gross reserves of the monetary authorities are the principal means of assuring that their own and other obligations to foreigners can be met.

The net of all six accounts might provide a very useful figure, but information on private foreign exchange is insufficiently available to permit its calculation. Furthermore, the definition "claims against and obligations of foreigners" is probably not observed in the accounts of many of the private holders so that the true net figure would not be known even if all the accounts were consolidated.

A third problem in the compilation of foreign exchange statistics is that of accounting properly for the holdings and transactions of international agencies. Two of the international agencies (the Fund and the EPU) were established in part for the purpose of alleviating the reserve problems of their members. It would seem, therefore, that world reserve statistics should show an increase in the liquidity of members following the establishment of these agencies and should reflect their transactions in the accounts of the countries concerned in a clear and unambiguous manner. The complexities of the way the agencies operate and the differences in their methods of bookkeeping, however, make this impossible.

Members of the Fund make capital subscriptions to the Fund, partly in gold and partly in their national currencies. On this account the gold holdings of the members declined on the establishment of the Fund and the world's liquidity, measured as the sum of country statistics, declined. The Fund's holdings of gold and of the currencies of its members are, however, included in the world total. In this total the world's gold holdings remained unchanged on the establishment

of the Fund, and the world's foreign exchange holdings rose by the sum of all members' subscriptions paid in member currencies. The members of the EPU, on the other hand, did not make subscription payments to the EPU, but agreed to finance through the EPU, and up to specified limits, their surpluses with other members. There are, therefore, no foreign exchange holdings (other than small amounts of dollars) to report as the holdings of the EPU, and the establishment of the EPU does not show an increase in the combined liquidity of its members. In fact, since pre-existing payments agreements balances were consolidated when the EPU was established, the figures would show a reduction in liquidity through the creation of the EPU.

The accounting of transactions is also different. Members of the EPU earning surpluses in their transactions with other members advance credits to the EPU and add the amount of the credit to their reported foreign exchange holdings. This is in some ways comparable to the manner in which the creditor would have kept his accounts if, in the absence of the EPU, the same transactions had occurred, financed by the debtor through reserves or foreign loans. The method of bookkeeping thus shows an increase in the liquidity of creditors, in the gross assets of Europe, and in the gross assets of the world which is larger the more the payments transactions of Europe are cumulatively unbalanced. The IFS table, based on accounts of members and reporting gross assets, shows the same increases for creditors, EPU countries as a whole, and the world when European payments transactions are unbalanced. In the case of Fund transactions, members whose currencies are drawn from the Fund obtain in effect a claim on the Fund in some respects similar to that which creditor countries of the EPU obtain on the EPU, but they do not add the item to their reported foreign exchange holdings. Hence, Fund transactions have no effect on the statistics of total foreign exchange holdings after the drawing country has spent the currency drawn from the Fund.

The reconciliation of reported data on foreign exchange holdings and foreign exchange liabilities

An attempt has been made to reconcile the foreign exchange data with the reported data on the foreign exchange liabilities of the United States, the United Kingdom, the European Payments Union, and the Bank for International Settlements. The results are presented in Table A, which shows the total gross foreign exchange assets of the world and of each of the monetary areas and compares with them the data on liabilities reported by the United States, the United Kingdom, EPU, and BIS. The difference is labeled "errors and omissions".

There are two principal disparities between the asset and liability data which, in addition to ordinary errors and omissions of many kinds, determine the size and sign of the "errors and omissions" line. Firstly, there are other currencies held and reported as foreign exchange but not reported in the liabilities section. Positive entries in the errors and omissions line may indicate the amounts of all such other currencies.

Secondly, the liability figures include some liabilities to other banks and to business and individuals, while the asset figures include official holdings only. All of the liability data published by the United Kingdom include liabilities to other banks and to business and individuals. Negative entries in the errors and omissions line may indicate the amounts of such liabilities.

The total of all U.S. liabilities to official agencies is available separately, so that this source of error is presumably excluded in the total world reconciliation. The figures as published by the United States, however, require two adjustments. For the year 1950 there is a large difference between the Bank of Canada's reported holdings of U.S. dollars and the U.S. reports of its liabilities to official agencies and banks in Canada.[10] Total U.S. liabilities were increased for 1950 by 619 million

[10] The difference presumably arose from Canadian purchases during 1950 of U.S. securities with original maturities slightly longer than one year. Cf. *Federal Reserve Bulletin*, March 1951, p. 232, in which Canadian holdings of U.S. securities with maturities up to 20 months are reported.

TABLE A. RECONCILIATION OF GROSS FOREIGN EXCHANGE ASSETS WITH FOREIGN EXCHANGE LIABILITIES

(In millions of U.S. dollars)

	1948	1949	1950	1951	1952
WORLD TOTAL[1]					
Total Gross Assets	13,300	10,250	12,900	12,350	12,350
Dollars[2]	2,917	3,071	4,507	4,062	5,133
Sterling[3]	11,478	7,856	8,163	7,870	6,506
Credit to EPU	—	—	402	665	1,077
Balances with BIS	52	108	250	192	364
Errors and omissions	*−1,147*	*−785*	*−422*	*−439*	*−730*
CANADA					
Total Gross Assets	610	636	1,170	953	977
Dollars	596	631	1,162	937	975
Sterling	13	5	9	16	2
Errors and omissions	—	—	—	—	—
LATIN AMERICA					
Dollar Countries					
Total Gross Assets	220	290	350	435	650
Dollars	285	359	360	405	607
Errors and omissions	*−65*	*−69*	*−10*	30	43
Non-Dollar Countries					
Total Gross Assets	1,229	820	825	595	525
Dollars	252	282	395	227	183
Sterling	544	224	126	160	17
Errors and omissions	433	314	304	208	325
CONTINENTAL EPU COUNTRIES					
Total Gross Assets	1,905	2,045	2,720	3,030	3,450
Credit to EPU	—	—	177	665	1,077
Total Net Assets	1,905	2,045	2,543	2,365	2,373
Dollars	901	869	1,140	1,150	1,717
Sterling	1,491	1,229	1,106	1,145	899
Balances with BIS	52	108	250	192	364
Errors and omissions	*−539*	*−161*	47	*−122*	*−607*
UNITED KINGDOM					
Total Gross Assets	404	402	768	174	458
Dollars	251	338	400	135	346
Credit to EPU	—	—	225	—	—
Errors and omissions	153	64	143	39	112
OTHER STERLING COUNTRIES					
Total Gross Assets	6,404	4,138	4,747	4,428	3,800
Dollars	62	38	99	108	133
Sterling	7,290	4,959	5,544	5,110	4,488
Errors and omissions	*−948*	*−859*	*−896*	*−790*	*−821*
REST OF THE WORLD					
Total Gross Assets	2,540	1,910	2,335	2,720	2,455
Dollars	570	554	951	1,100	1,172
Sterling	2,140	1,439	1,378	1,439	1,100
Errors and omissions	*−170*	*−83*	6	181	183

[1] The monetary authorities of the United States hold no foreign exchange assets.

[2] Adjusted for Canadian and Japanese discrepancies. See text for details.

[3] Excluding U.K. liabilities to dependent areas and dollar countries other than to Bank of Canada.

dollars to account for this difference. There is secondly a problem in the U.S. reports of liabilities to Japan. Japan publishes its official holdings of U.S. dollars. The amounts agree with U.S. reports of total liabilities to Japanese official agencies and banks, but apparently these amounts are included under liabilities to banks rather than under liabilities to official agencies in U.S. statistics.[11] Total U.S. liabilities to official agencies for all of the years shown have therefore been increased by the amount of Japanese reported official dollar holdings. This adjustment increases the reported U.S. liabilities to official agencies by 669 million dollars in 1952, or 15 per cent of the U.S. total.

In constructing the monetary area reconciliations, however, other problems arise in the data on U.S. liabilities. There are available from U.S. sources data by country for only the total of U.S. liabilities to official agencies and other banks for 1950 and later years, and only the total of all U.S. liabilities including liabilities to business and individuals for earlier years. However, for five of the countries whose dollar holdings are especially important (Canada, Cuba, Japan, the Philippines, and the United Kingdom[12]), national figures on official holdings of U.S. dollars are available and were used. U.S. liabilities to the official agencies of other countries were therefore estimated by multiplying the liabilities to official agencies and banks of these countries (all liabilities prior to 1950) by an adjustment factor C/F calculated in the following way:

U.S. reported liabilities to all official holders plus adjustments for Canada and Japan	= A
Official holdings of dollars reported by Canada, Cuba, Japan, the Philippines, and the United Kingdom	= B
Estimated official holdings of dollars by other countries (A − B)	= C
U.S. reported liabilities to all official holders and banks (total holdings prior to 1950) plus adjustment for Canada in 1950	= D
U.S. reported liabilities to official holders and banks (total holdings prior to 1950) in Canada, Cuba, Japan, the Philippines, and the United Kingdom	= E
Liabilities to official holders and banks (total holdings prior to 1950) in other countries (D − E)	= F
Adjustment factor for estimation of official holdings of other countries	C/F

It is recognized that the table is not strictly a reconciliation table since in the cases discussed the same figures have been used on both sides of the reconciliation.

The reconciliation indicates that the basic data on foreign exchange are reasonably satisfactory and that most of the world's holdings of foreign exchange represent, as would be expected, the liabilities of either the United States or the United Kingdom. For the world as a whole, reported liabilities exceed reported assets by some 750 million dollars. This excess of liabilities over assets results from the inclusion in the liabilities data of sterling liabilities to banks, business, and individuals, and to the inclusion of both sterling and dollar liabilities to the Soviet bloc and a few small countries for which no assets data are reported. These amounts are offset in part by the inclusion in the assets data of holdings of currencies other than dollars and sterling. Some measure of the importance of sterling liabilities to nonofficial holders is given in the errors and omissions line for Other Sterling Countries. Since this entry alone exceeds the errors and omissions for the world total, it is apparent that holdings of other currencies play a small but significant role. Holdings of other currencies apparently play their

[11] "If reported private dollar balances are adjusted to exclude Japanese holdings (which are technically reported as private, though in reality of an official character). . . ." See *Federal Reserve Bulletin*, March 1952, p. 231.

[12] The U.S. dollar holdings of the monetary authorities of the United Kingdom can be estimated by deducting the U.S. Federal Reserve Board's estimate of the U.K. gold holdings from the U.K. figure for gold and U. S. and Canadian dollar assets, on the assumption that Canadian dollar holdings are small.

largest role in the non-dollar countries of Latin America. The error arising from the inclusion in the liability data of liabilities to the Soviet bloc and other unreported countries is reflected largely in the Rest of the World figures insofar as sterling is concerned. The corresponding error for the dollar figures is distributed between most of the areas owing to the method of their calculation.

The reconciliation table also indicates that the problem of gross and net assets is not as serious as it might be since most of the foreign exchange holdings of the world represent the liabilities of only two countries, the United States and the United Kingdom, and these are almost entirely denominated in dollars or sterling (i.e., foreign currency from the holder's point of view). It follows from these facts that the net assets of the monetary authorities of most countries cannot be appreciably different from their gross assets, since if the monetary authorities of most countries had appreciable foreign liabilities the foreign assets of other countries would reflect them and lead to plus errors in the reconciliation table. And it follows directly from the facts that foreign exchange liabilities are largely claims against the United States and the United Kingdom and that these are largely denominated in dollars or sterling, that the statistics of foreign exchange of the monetary authorities must be approximately consistent with the definition "claims against foreigners" regardless of whether some countries use the definition "claims in foreign currency".

Economic Development and Financial Stability

Felipe Pazos*

THERE ARE TWO schools of thought in relation to financing economic development. On one side are those who hold that a policy of monetary and financial stability is incompatible with development and are resigned to the idea that inflation and disequilibrium in international payments are inevitable, if there is to be any development at all. On the other are those who assert that a policy of financial stability is the best way to attain balanced economic development.

This paper,[1] in supporting the second of these views, analyzes the basic objectives of development policy without a continual rise in prices, without monetary depreciation, and without disequilibria in international payments. The analysis requires an examination, at some length, of the internal mechanics of the process of increasing production in a closed economy and of the factors that determine the equilibrium of international payments in an open economy.

Concept of economic development

Economic development may be defined as an increase in the productive capacity and production of a country at a rate higher than the increase in its population. Following customary usage, this definition might be qualified by restricting it to low income countries. However, since the mechanics of economic growth are essentially the same in low income and in high income countries, and any line of demarcation between the two is necessarily arbitrary, it is best not to insist upon this qualification, though in fact the purpose of this paper is to study the phenomenon of economic growth in countries with per capita incomes less than, say, $400 per annum.

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[1] This paper is a revised translation of a paper presented to the Third Meeting of Experts of the Central Banks of the American Continent, held in Havana in February 1952.

Development in the sense defined does not include increases in real per capita income arising from an improvement in the terms of trade, for this is an accidental and reversible situation and gives no assurance of permanent progress. Nor does it include increases of real income obtained by utilizing more fully productive equipment which previously was not used at full capacity.[2]

The concept of development should be regarded as covering increases in production either for export or for domestic consumption. However, for several reasons attention will be concentrated in this paper mainly on the development of production for the domestic market: First, the consumption of raw materials and food in the world tends to increase at a slower rate than the consumption of industrial products and services, so that, if development were for the most part concentrated upon increased production of the raw materials and food which have been the traditional exports of underdeveloped countries, the rate of growth of these countries would be less rapid than they might reasonably expect.[3] Secondly, in formulating development policies, countries should not rely too much on external factors which are quite beyond their power to control. And thirdly, it is widely believed that the risks of instability will be lessened by diminishing the present dependence of most underdeveloped countries on exports, not in the sense of decreasing their volume or absolute value, but by increasing the volume and value of production for domestic consumption and investment.

In examining the problem of development, it should be remembered that sometimes the more urgent immediate practical question is the avoidance of retrogression. In a study of the process of growth of real income, it should be kept in mind that population also increases; if income does not increase more rapidly than population, there is stagnation or decline instead of progress. No concrete studies in this field have yet been made, but there is reason to believe that in some Latin American countries, and certainly in some underdeveloped countries in other continents, the immediate problem is not one of advancement but one of preventing regression.

[2] The definition of development proposed above is not significantly different from that proposed by Dr. Ahumada: "Any increment of net production per man-hour, taking place under conditions of full employment" ("Desarrollo Económico y Estabilidad", *El Trimestre Económico*, Vol. XVIII, No. 3, July–September 1951). It is more convenient, however, not to associate the concepts of development and full employment in the way suggested by Dr. Ahumada's definition, as the notion of full employment, in its application to underdeveloped countries, itself requires further definition.

[3] This point has been further elaborated in *Economic Survey of Latin America, 1949* (prepared by the Secretariat of the Economic Commission for Latin America, United Nations, Department of Economic Affairs, New York, 1951).

Mechanism of Development in a Closed Economy

The analysis that follows of the mechanism of the development process is based on ideas presented by E. D. Domar.[4] The problem treated by him was that of the maintenance of full employment in industrial countries, and not of economic development in general. Nevertheless, his analysis of the process of increased production as a function of an increase of the stock of capital is a valuable instrument for clarifying the development mechanism.

Process of increase in production

Any examination of the possibility of development without a rise in the general level of prices assumes as an obvious condition that the output of goods and services increases at the same rate as monetary income. It therefore becomes necessary to examine how the increase in real production takes place; which factors and which mechanism determine it; and which factors and which mechanism determine the increase in monetary income.

The increase in real production may have a variety of origins. The first and most elementary is the use of a greater volume of all the factors of production. If a greater volume of labor, of capital, and of natural resources is applied to the productive process, production will increase. It will also increase if the volume of only one or two, instead of all, of the factors of production are increased. In fact, however, though theoretically the factors of production can be combined in an infinite variety of forms, in practice the possible combinations are more strictly limited than is generally assumed in marginal economic theory. Finally, production can also be increased by employing a more appropriate technology.

In an underdeveloped country, practically every conceivable form of increase of production requires an increase in the stock of capital. It may be claimed that production might be increased by exploiting a greater quantity of natural resources; for example, by cultivating new land. This, however, is likely to require capital outlays for communications, irrigation, drainage, etc. In the exploitation of mineral resources, the necessity for additional capital is greater and more obvious than in agriculture; and if a greater volume of labor is to be employed, it must be provided with a stock of capital at least equal to the average available for the workers previously employed, if it is not to be utilized in conditions of productivity that are lower than those previously established.

[4] "Expansion and Employment", *American Economic Review*, March 1947, and "The Problem of Capital Accumulation", *American Economic Review*, December 1948. The present paper was written before the author had had an opportunity to read R. F. Harrod, *Towards a Dynamic Economics* (London, 1951).

If an increase of production is sought through technological improvements, these nearly always require the application of capital in the form of machinery, equipment, fertilizers, irrigation, etc. We say "nearly always" because there are some technological improvements, especially in the agricultural sector, which require little or no additional capital. But in general it may be taken for granted that any increase in production will call for a greater endowment of capital, and that it is this increase in the basic capital facilities of the economy that makes possible an increase of productivity and production.

If the relationship between an increase in the stock of capital and the resultant increase of real production of goods and services were a constant, the rate at which production could increase might be easily calculated. Prima facie, however, this relationship would appear to be highly variable and difficult to calculate. In theory, a given increase of income might be the result of any one of an infinite number of possible combinations of capital, natural resources, and labor. And in practice, the fixed capital requirements of different industries and crops are so diverse that the average capital ratio may vary widely from year to year according to the composition of investment.

Nevertheless, statistical and historical analysis has shown a fairly constant relationship in the past between an increase of capital stock and an increase of income. After examining the statistics of increase in national income and capital formation in the United States since the closing decades of the last century, Professor William Fellner found a certain regularity in the relationship between these two elements. Although its value changed in some years, the average was around 0.30. In other words, it was found that, historically, for each increase of 100 units of value in the stock of capital, income increased to the extent of 30 units of value.[5]

It goes without saying that the concept used here is quite different from that of the marginal productivity of capital. We are trying to determine not how much income would increase if one unit of capital were added, the quantity of all the other productive factors remaining constant, but rather what real increase of income would result if this additional unit of capital were combined with the required additional quantities of the other factors. We are attempting to measure the increases of income that go together—that have gone together historically—with increases of the stock of capital. In this historical analysis, equipment obsolescence is taken into consideration and only the net increase of the stock of capital is registered.

The increase in production that can be obtained by using a greater

[5] W. Fellner, "The Capital-Output Ratio in Dynamic Economics", in *Money, Trade, and Economic Growth* (volume in honor of John Henry Williams, New York, 1951).

stock of capital is an average of investments of low productivity, such as dwellings, and of investments of the highest productivity, such as irrigation, agricultural machinery, and industrial plants, as well as investments of a productivity so diverse and difficult to determine as roads, and investments of a social character without immediate economic productivity, such as parks, schools, and hospitals.

By projecting this historical relationship, we can estimate the rate which development can attain by virtue of the process of capital accumulation. Assume that in period zero the existing stock of capital has a value equal to 3,333 monetary units, and that in the same period the national income is equal to 1,000 and saving and investment[6] are each equal to 100. As the new investment of 100 implies that in period zero new factories, equipment, and production facilities in general are built, the stock of capital in period 1 will be 3,333 + 100, and consequently real production in this period will be greater than in the preceding period. If a coefficient of average productivity of capital of 0.30 is then applied, national income will be increased by 30 units, from 1,000 to 1,030 (Table 1).

TABLE 1

Period	Stock of Capital	New Investment	National Income	Current Savings
0	3,333	100	1,000	100
1	3,333 + 100	103	1,030	103

As the potential increase of income is 30 per cent of the investment in the preceding period, and investment has been 10 per cent of income, the rate of increase in income has been 3 per cent. The rate of potential increase, i.e., the rate of development, is a function of the proportion of income saved and invested and of the coefficient of productivity of capital. If the rate of potential development is represented by d, the proportion of income saved (propensity to save) by s, and the coefficient of average productivity of capital by α, the rate of potential development can be expressed by the Domar formula:

$$d = \alpha s$$

The rate of development will obviously change if either of the above-mentioned coefficients is modified. If, for example, the propensity to save was 0.15 instead of 0.10, and the average productivity of capital was 0.40 instead of 0.30, the rate of growth would be 6 per cent annually.

[6] Saving and investment are used here in their broader conceptual sense, including private and governmental capital formation.

Process of increase in monetary income

The increase of real national product from 1,000 to 1,030, which is permitted by an increase of 100 in the stock of capital, does not necessarily determine a comparable increase of monetary income. If monetary income does not increase, there will be no effective demand for the increased volume of production at the prices prevailing in period zero. If, because investment subsequently does not increase enough, or because the propensity to save increases, money income does not increase but, for example, remains at 1,000 or falls below that figure, a deflationary situation will develop in which monetary incomes are insufficient to purchase the total volume of production at period zero prices. The level of prices will have to fall, or some part of the production will remain unsold. This will inevitably cause entrepreneurs to refrain from utilizing, in the next period, the full productive potential of the economy. Reacting to the lower profits obtained, they will reduce production, and instead of a process of development there will be stagnation and depression.

If, on the contrary, the increase of monetary income were 70 or 100 instead of 30, an inflationary situation would arise, with purchasing power in excess of the value of production at period zero prices. Production of 1,030 would not be sufficient to satisfy a demand of 1,070, and prices would rise.

Assume that monetary income during period 1 actually increases to 1,030. If the relationship between income and savings remains the same as in period zero, total savings during period 1 will rise to 103. In turn, in order to maintain stability of income, prices, and employment, it is necessary for investments to be equal to savings. Consequently, investments during period 1 would have to increase to 103. In other words, if the multiplier is equal to 10, it will be necessary for new investments to increase to 103, i.e., in the same proportion as the increase in productive capacity which is the result of the investment in period zero.

Thus, while the increase of output in a given period is a function of investment in the preceding period, the increase in monetary income is determined by the volume of current investment in the given period. If investment and potential production both increase in each period at the same rate, a rate determined by the formula αs, equilibrium will be maintained between the increases of monetary income and of real production of goods and services.

The rate of development, therefore, depends on the proportion of income that the country wishes to save and invest and on the coefficient of average productivity of capital. Since this coefficient is an average of the productivity of each of the individual investments which make up the total, productivity will be low and development slow, if the country

dedicates a great part of its new capital to investments of low returns, such as dwellings or social services. This does not, of course, mean that no capital should be dedicated to these purposes. If, on the contrary, an important part of the new capital is devoted to investments of high productivity, as industrial and agricultural investments commonly are, the general average will also be high.

A preliminary examination of the statistics of growth of real income and capitalization in Colombia and Chile during the past few years (see pp. 235–36) suggests that for these countries the ratio of the increase in income to the increase in capital stock has been at least as high as that for the United States. It is obvious that, if saving were directed toward investments having the highest productivity, the coefficient might exceed 0.30, though in the present state of knowledge it is not possible to predict whether it would reach 0.40 or, perhaps, even a higher figure.

Possible rates of growth

The formula $d = \alpha s$ may be used as a formula not only for balanced development, but also for maximum growth in real terms. Development is not possible at a rate faster than that indicated by the formula. In order to accelerate the rate of growth, government policy or private enterprise has to increase one or the other of the two factors; there is no other way to achieve this objective. If inflation is assumed to be effective in accelerating development, it can be only by means of an increase in s, through the process of forced saving.

Table 2, which is based on purely hypothetical figures, is intended to illustrate quantitatively, within reasonable limits, certain possible rates of growth. The figures in the table show that in a country with a propensity to save of 0.05, which directs its savings to investments of relatively low productivity, such as those with a coefficient of 0.20, the rate of growth will be 0.01, which is lower than the rate of population growth of almost all the Latin American countries. Even if savings were

Table 2. Possible Theoretical Rates of Growth

	Propensity to Save		
Productivity	0.05	0.10	0.15
0.20	0.01	0.02	0.03
0.30	0.015	0.03	0.04
0.40	0.02	0.04	0.06

directed toward investments with a coefficient of 0.30, the rate of growth of the national product would still hardly exceed the rate of population growth. On the other hand, if the propensity to save were 0.15 and savings were directed toward investments having a coefficient of 0.40, growth would be at the very satisfactory rate of 6 per cent. As the coefficient of mean productivity of capital in Chile and Colombia is probably near to 0.40, these countries could develop an annual rate of growth of 6 per cent if their savings amounted to 15 per cent of national income.

Capitalization in Chile, Colombia, and Cuba

The available estimates of the gross and net coefficients of capitalization in Chile, Colombia, and Cuba for the last seven years are summarized in Table 3. These figures are not strictly comparable because of

TABLE 3. CAPITALIZATION AS PERCENTAGE OF GROSS NATIONAL PRODUCT[1]

	1945	1946	1947	1948	1949	1950	1951
			Gross Capitalization				
Chile	10.3	10.2	9.2	10.6	10.4	11.2	11.2
Colombia	12.7	15.7	16.7				
Cuba	12.4	18.2	16.0	14.0	13.8	13.8	14.2
			Net Capitalization				
Chile	6.8	7.0	6.2	7.6	7.2	4.7	4.7
Colombia	9.4	12.3	13.6				
Cuba	10.9	17.7	14.9	12.4	10.5	10.4	10.4

[1] Based on data from the following sources: Chile, Corporación de Fomento de la Producción; Colombia, International Bank for Reconstruction and Development, *Basis of a Development Program for Colombia* (Washington, 1950); Cuba, National Bank of Cuba.

the different estimating procedures that have been adopted and the great margins of error to which the capitalization estimates are always subject. They should be interpreted only as indicating orders of magnitude. Examined in that light, they show an index of capitalization in Chile markedly lower than that for Colombia or Cuba, with a sharp decreasing tendency. Since Chile has "forced" savings through inflation, while Colombia has had a more moderate type of inflation and in Cuba savings have been altogether spontaneous, the figures seem to suggest that "forced savings" do not force, but instead weaken, capital formation: the volume of spontaneous savings discouraged is greater than the volume of savings forced.

Even though the coefficient of savings in a given country depends on

many factors, and the differences between countries may be due to differences in the distribution of income among social classes, or to the nature and habits of the population, and not to monetary factors, the figures examined tend, all the same, to show that inflation has a negative influence on capitalization; instead of accelerating capitalization, as is maintained by those who favor inflation, inflation sharply retards it. It may be that, in the first stages, inflation may have the positive effects ascribed to it, but once the country becomes accustomed to inflation, consumption tends to increase at a greater rate than monetary income, and capital formation decreases.

According to the estimates of the Corporación de Fomento de la Producción, Chile's national income increased, at constant prices, 25 per cent between 1940 and 1949, i.e., at an average annual rate of 2.8 per cent. Since during these years the average coefficient of capitalization was 7.12 per cent of income, the average productivity of capital seems to have been 0.39.[7] According to the estimates of a Mission of the International Bank for Reconstruction and Development, Colombia's national income increased, at constant prices, 5.14 per cent per annum between 1939 and 1947. During the same period, the coefficient of capitalization averaged around 10.28 per cent. The relationship between these figures gives an average productivity of 0.50.

During the period for which these calculations have been made, the figures of average productivity of capital must have been strongly influenced by income variations due to improvements in the terms of trade and to a more intensive utilization of the productive equipment, as a consequence of the war and the postwar period. Both for this reason, and because of the wide margin of error inevitable in such calculations, the figures should be taken only as an indication that for Chile and Colombia the alpha coefficient had an order of magnitude comparable to that found by Fellner for the United States.

As far as is known, no studies on capital formation have been made for the smaller Latin American countries, where there is a lower per capita income. It would be of great interest to determine whether the savings coefficient of these countries allows, or will allow in future, income to increase more rapidly than population. It is to be feared that the answer would be negative in many cases, and that there are some countries which, instead of gaining, are losing ground.

Place of saving in development policy

The policies adopted by highly developed countries to combat unemployment during the depression contrast sharply with the policies

[7] Since $d = \alpha s, \alpha = \frac{d}{s} = \frac{0.0278}{0.0712} = 0.39.$

that are appropriate for rapid development. These policies sought to reduce to a minimum the two development factors we have been analyzing, that is, to curtail savings through a fiscal system which taxed in a specially severe manner the savings classes, and to diminish the average productivity of capital by directing savings toward investments which would improve the amenities of life or would otherwise serve social ends. These policies may be justified in highly developed countries, at times when the objective of policy is not the growth of the national product but its stabilization at the highest possible level of employment. The policies to be followed by less developed countries require, on the contrary, increased savings, either through spontaneous and private means, or through the fiscal mechanism, or, even better, through both. These countries must also try to increase the productivity of the economy, dedicating new investment to the greatest possible extent to the development of industry and agriculture.

The extent to which a government should tax consumption in order to increase capitalization, and the extent to which it should direct public capital formation toward investments having high productivity—thus sacrificing investments of an aesthetic and social nature, such as urban improvements, schools, hospitals, and popular housing—are matters that cannot be evaluated in the light of purely economic criteria. From an economic point of view, the development process will be much more rapid, the greater the decrease in consumption and the smaller the proportion of capital devoted to social welfare. From an ethical point of view, it is difficult to evaluate the extent to which the present generation should sacrifice its consumption and social welfare in order to increase, more than proportionately, the consumption and welfare of the next generation. From a political point of view, a program of austerity undertaken to accelerate development would not, in all probability, be very popular.

It has recently been suggested that "it might be possible to increase savings by holding consumption constant while production increases or, at least, by allowing it to rise only in lesser proportion".[3] In this way, the development process might be accelerated without decreasing consumption. In principle, the suggestion seems reasonable, but a simplified case, which illustrates the hypothesis in an extreme form, shows that it has serious practical limitations. In constructing Table 4, it has been assumed that the mean productivity of capital is 0.40, the annual increase in consumption and in population is 2 per cent, and the rate of capitalization is sufficient to absorb the remainder of the increment of national income.

[3] *Measures for the Economic Development of Under-Developed Countries* (Report by a Group of Experts appointed by the Secretary-General of the United Nations, New York, May 1951), p. 39.

On the stated assumption, the increasing capitalization would greatly accelerate the process of development, and income would rise by 168 per cent in the course of a ten-year period. It is, however, very doubtful

TABLE 4

Period	Stock of Capital	New Investment	National Income	Consumption	Savings
0	3,333.00	100.00	1,000.00	900.00	100.00
1	3,433.00	122.00	1,040.00	918.00	122.00
2	3,555.00	152.44	1,088.80	936.36	152.44
3	3,707.44	194.69	1,149.78	955.09	194.69
.....	.....	.....	.....	.....	.....
10	7,526.25	1,580.22	2,677.31	1,097.09	1,580.22

whether any model of this kind could be used as a guide for development policy. It would presuppose the initiation of the development process by a large-scale expansion of heavy industry, which is precisely the most difficult to develop. The model is, of course, a *reductio ad absurdum* of the hypothesis of financing development through the capitalization of income increases, but it serves to emphasize the difficulties of such a system. From a technical point of view, the question also arises whether it is possible to expand productive plant at a much faster rate than the output of consumption goods. From an economic and financial point of view, it seems doubtful whether an attractive rate of profit could be maintained for investments in the face of stationary consumption.[9]

Need for planning

A development process requires the institution of measures, and the solution of problems, on the economic, technical, administrative, educational, and social levels, as well as on the financial level. When it is stated that saving and investing 10 per cent of national income may increase the latter by 3, 4, or 6 per cent a year, it is implicitly assumed that all the other problems have been solved, and that private entrepreneurs, with the aid and advice of the government, or the government with the cooperation of entrepreneurs, have directed investments toward the production of goods which will find a market, either because of the increase in monetary income itself, or because the goods produced are substituted for other products which were previously imported, and that the new plants have been efficiently designed and constructed and will be efficiently operated.

[9] In the analysis of this concept the author has benefited greatly from collaboration with Mr. Julián Alienes of the National Bank of Cuba.

In real life, these things cannot, of course, be taken for granted. A development program requires that productive resources and possibilities should be carefully, intensively, and continuously studied, and that large-scale educational plans should be made for the training of technicians, administrative personnel, and skilled labor; it necessitates the coordination of adequate fiscal, social, foreign trade, and public works policies with the program of expanding production. Summing up, it necessitates planning, not the type of planning that has for its end the control of production or of distribution, but planning designed to coordinate all efforts, both public and private, toward common goals and goals supplementary to each other; planning designed to direct public and private investment (the latter stimulated through credit facilities, technical aid, and tax incentives) toward those lines of production whose development is likely to be most beneficial.

Investment budget

In particular, a development program requires the preparation, from time to time, of an investment budget, in which estimates are included of the probable volume of private investment and provision is made for a sufficient amount of public investment so that aggregate investment will reach the level necessary to raise monetary income at the same rate as the increase in production, in accordance with the criteria and policy goals discussed. Naturally, the public investment budget should be flexible, so that it can be revised upward or downward throughout the year, to the extent that private investment falls short of, or exceeds, planned estimates.

If such a program could actually be implemented and if it were effectively to promote the uniform and continuous expansion of national income at a yearly rate of 3, 4, or 5 per cent, thus instilling in private entrepreneurs confidence that income would not fall but would continue to grow at a similar rate, the process of development would be made much easier, because entrepreneurs would plan their investments in accordance with the expected rate of growth and without having to fear that a sudden fall in income might contract the demand for their products, thus threatening the loss of their investment.

Need for external stability

The problem of lack of confidence in the future on the part of private entrepreneurs and the consequences of this lack of confidence in development are of special importance in an open economy, which is highly dependent on international markets, as are most of the Latin American countries. Such dependence makes it highly unlikely that the symmetri-

cal scheme of continuous development outlined above can ever be fully realized. One of the greatest contributions that highly developed countries could make to the growth of their underdeveloped neighbors would be to ensure more stable markets for raw materials and food products. It would, however, exceed the reasonable limits of this paper to attempt to summarize or evaluate the issues involved in this problem.

Equilibrium of the Foreign Balance

Let us now turn from an examination of the conditions necessary for the uniform and balanced development of a closed economy to an analysis of some of the factors that determine the equilibrium of international payments.

Dependence of external on internal equilibrium

It is well known that Income equals Consumption plus Internal Investment plus Exports minus Imports. On the other hand, Income is also equal to Consumption plus Savings. Savings must therefore be equal to Internal Investment plus Exports minus Imports, so that the foreign balance, i.e., Exports minus Imports, is equal to the difference between savings and investment, exports and imports in this context covering all debits and credits on current account.[10]

These identities tell us that the balance on current account in the balance of payments is not something accidental or independent of the process of internal expenditures, and its distribution between investment and consumption, but it is intimately and directly related to it. They tell us further that a deficit in the balance of payments on current account is the result of spending for consumption and investment more than the country produces. Consequently, in order to have equilibrium in international payments it is necessary that there should also be internal equilibrium; total expenditures for consumption and investment should not exceed the real income of the country unless the excess is compensated or financed by the importation of foreign capital.

These statements should not be construed to mean that investment in excess of savings, which causes a deficit in the balance of payments, is necessarily voluntary investment. Let us assume a decline in exports, without any similar change in production for export. If exportable production equals 100 units, but on account of an unforeseen contraction

[10] Although this identity is a basic concept in contemporary economic thinking, it is frequently overlooked in analyzing the balance of payments effects of economic development. Effective use of the concept in relation to development has been made, however, by Juan Noyola, in his *Desequilibrio Fundamental y Fomento Económico en México* (México, D.F., 1949).

in foreign demand only 80 units can be sold, 20 units will necessarily accumulate, as an increase of inventories. Since an increase in inventories is an investment, internal investment will have been involuntarily increased by 20 units. If imports have been maintained at a rate of 100, there would be a deficit of 20 in the balance of payments, equal to the involuntary increase in investments.

The operation of the identity between the foreign balance and the difference between savings and investments may be further examined in a slightly more complex example. If Y stands for national income, X for exports, I for investments, M for imports, S for savings, m for the marginal propensity to consume imported goods, and s for the marginal propensity to save, the formulae for the joint multiplier for exports and investments are as follows:

$$Y = (X + I)\frac{1}{m + s} \tag{1}$$

$$M = mY \tag{2}$$

$$S = sY \tag{3}$$

Let us assume a marginal propensity to consume imported goods (m) equal to 0.30, and a marginal propensity to save (s) equal to 0.10. Let us further assume a position of equilibrium with exports amounting to 300 and investments to 100, succeeded by two alternative positions of disequilibrium: one in which investments fall to 60 and another one in which they rise to 112. The positions corresponding to these hypotheses are summarized in Table 5.

TABLE 5

Period	Exports	Investment	Income	Aggregate Consumption	Consumption of Domestic Goods	Imports	Savings	Foreign Balance
0	300	100	1,000	900	600	300	100	0
1[1]	300	60	900	810	540	270	90	30
1[2]	300	112	1,030	927	618	309	103	−9

[1] First hypothesis.
[2] Second hypothesis.

When investments fall, income falls, imports decrease, and a positive balance is produced in the international account, which is equal to the excess of savings over investment. When investments rise, income rises, imports increase, and, exports having remained at the same level, there is a deficit in the balance of payments.

Maintenance of external equilibrium

The dependence of external on internal equilibrium having been more than sufficiently stressed, the question then arises of how to maintain external equilibrium on the assumption that investment and income increase, exports remaining constant. In most cases, for the reasons already stated, economic development presupposes an increase in production greater than the increase in exports. On this assumption it is obvious that, if external equilibrium is to be maintained, imports must not be allowed to increase; the marginal propensity to import has to be reduced to zero and the whole increment in income spent on domestic goods.

In the hypothetical case where investment was increased from 100 units to 112, the increment of 30 units in monetary income was distributed in the following manner: 3 units were saved, 18 were devoted to increased consumption of goods produced by industries already established, which had raised their production by that amount, and 9 were allocated to increased consumption of import goods. In order to maintain equilibrium in international payments, these 9 units of income should have been used to purchase domestically produced goods, and domestic industries, instead of having increased production of consumption goods by 18 units only, should have increased it by 27.

The distribution of the increment of 30 units in real production might also be described as involving the allocation of 12 units to capital goods (increase of investments from 100 to 112) and of 18 to consumption goods. Since for the reasons already stated real production could increase by only 30 units from one period to another, it would have been necessary, in order to increase the production of consumption goods by 9 units, to reduce the production of capital goods by the same amount, that is to say, investments should have been reduced from 112 to 103. This would have required, of course, that the investments made during period zero should have been used to construct the equipment required to increase production of consumption goods by 27 units and not by 18, and that installations for increasing capitalization should have been expanded to a lesser degree. If these adjustments had been made, a situation of equilibrium would have been attained, as indicated in Table 6. The figures in Table 6 have been derived from those in Table 5

TABLE 6

Period	Exports	Investment	Income	Aggregate Consumption	Consumption of Domestic Goods	Imports	Savings	Foreign Balance
0	300	100	1,000	900	600	300	100	0
1	300	103	1,030	927	627	300	103	0

by a linked modification that changes this model to a position of external and internal equilibrium, and they correspond exactly to the multiplier formula discussed above. If in the first of these formulae we should let ΔX equal zero and m equal zero, we would have the formula for the investment multiplier in the closed economy:

$$\Delta Y = \Delta I \left(\frac{1}{s}\right)$$

which explains the increment in income of 30 units, as a result of an increment of 3 in investment and a marginal propensity to save of 0.10.

The same figures could also serve as a model of uniform development in an open economy were it not for the fact that, normally, development requires increased imports of capital goods, such as motors, machinery, rolling stock, precision instruments, steel, etc. Even though it would be theoretically possible to begin development with heavy industry—and it is advisable that underdeveloped countries should not neglect this phase of industrialization as far as it may be possible and economically reasonable for them to embark upon it—development would, normally, during its first stages, be much more intense in light industry and, consequently, there would be a substantial increase in imports of equipment. If exports do not increase, in order to maintain equilibrium in international payments it is necessary that imports of consumption goods should decrease, to make room for the increment in imports of capital equipment.

Four theoretical models

For a further study of this new factor, a series of theoretical models may be constructed in which total imports are subdivided into consumption goods imports and capital goods imports (Table 7). The former vary as a function of consumption, and the latter as a function of changes in the total amount of investment. Therefore, in relation to investment operations a distinction may be made between payments made for domestic goods and services and payments made for imported equipment. In all these models it is assumed that out of every 100 dollars of total investment 60 are used within the country and 40 are sent out to pay for imported equipment.

The first line of each model, which is the same for all, shows a situation of equilibrium, in which savings are equal to investment and exports to imports. In each model, monetary income and real income then increase in a subsequent period by 30 units, from 1,000 to 1,030. Monetary income is increased by the maximum allowed by the increase in productive capacity which has been made possible by the capitalization that took place in the initial period. Therefore, there is neither a

TABLE 7

	Exports	Investment			Income[1]	Consumption			Savings	Imports[2]	External Balance on Current Account[3]
		Domestic	Imported	Total		Domestic	Imported	Total			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
					Model 1						
0	340	60	40	100	1,000	600	300	900	100	340	0
1a	340	61.8	41.2	103	1,030	628.2	298.8	927	103	340	0
					Model 2						
0	340	60	40	100	1,000	600	300	900	100	340	0
1b	340	72	48	120	1,030	618	309	927	103	357	−17
					Model 3						
0	340	60	40	100	1,000	600	300	900	100	340	0
1c	340	120	80	200	1,030	570	357	927	103	437	−97
					Model 4						
0	340	60	40	100	1,000	600	300	900	100	340	0
1d	240	161.8	107.7	269.5	1,030	628.2	298.8	927	103	406.5	−166.5

[1] Col. 1 + 2 + 6, or Col. 8 + 9.
[2] Col. 3 + 7.
[3] Col. 1 − 10.

CORRIGENDUM

The Adequacy of Monetary Reserves

The following corrections should be made in the reserve data included in the article, "The Adequacy of Monetary Reserves," *Staff Papers*, Vol. III, No. 2 (October 1953):

1. In Table 1, the figure for Belgium-Luxembourg reserves of gold plus foreign exchange at the end of 1928 (p. 201) should be $345 million instead of $207 million. The publication of the League of Nations from which the figure in the Fund report was drawn takes into account only the "apparent" foreign exchange reserves of the National Bank of Belgium—i.e., the item "traites et disponibilitiés-or sur l'étranger"—published at the time in the Bank statement, and omits both the Bank's "non-apparent" foreign exchange reserves—i.e., the foreign exchange included under the item "portefeuille sur la Belgique et sur l'étranger"—in the Bank statement and the Treasury's foreign exchange reserves. In place of the League of Nations figures, comprehensive figures published by the National Bank of Belgium in "Statistiques économiques belges 1929-1940," *Bulletin d'Information et de Documentation* (special issue, no date), p. 53 should be used. This correction necessitates the revisions, given below, in the figures in Table 1 for Gold plus Foreign Exchange Reserves for 1928:

	Original Figures	Revised Figures
	(In millions of U.S. dollars)	
Continental EPU countries	5,000 3/	5,140 3/
Belgium-Luxembourg	207	345
Total, including international agencies and United States	12,900 3/	13,050 3/
Total, excluding international agencies and United States	9,150 3/	9,300 3/

3/ Estimate (rounded).

(over)

2. These corrections necessitate certain revisions in the figures for the Ratios of Gold plus Foreign Exchange Reserves to Imports in 1928, given in Table 3 (p. 207):

	Original Figures	Revised Figures
	(In per cent)	
Continental EPU countries	45	46
Belgium-Luxembourg	23	39
Total, including gold and reserves of international agencies and gold and reserves *and* imports of the United States	42	43

3. It should be noted that the reserve figures for Belgium-Luxembourg given in Tables 1 and 3 cover only the reserves of Belgium, whereas the import data given in Table 2 (p. 204), which are used to obtain the ratios in Table 3, apply to Belgium-Luxembourg.

rise nor a fall in prices in any of these models; there is neither inflation nor deflation. The reason for the increase in monetary income by 30 units differs for each model. In the first model there is a small increase in investment, strengthened in its multiplying effect by a decrease in imports of consumption goods. In the second model there is a greater increase in investment, neutralized by a rise in imports which increase in proportion to income, the marginal propensity to import remaining constant. In the third model, it is assumed that investments are doubled, imports increasing considerably. In the fourth and last model, a considerable increase in investment (even greater than in model 3) is also assumed, but for the purpose of compensating a fall in exports. In the first three models exports remain constant; in the fourth they fall substantially. In all these models the propensity to save remains constant.

In model 1 equilibrium is maintained in the balance of payments. Since exports have not risen and imports of equipment have risen from 40 to 41.2, imports of consumption goods must fall by 1.2. This fall in imports has a multiplying effect similar to that of a rise in exports or in internal investments, which, for this reason, are able to rise very little if it is desired to avoid an expansion of income greater than 30. Internal investments rise by 1.8, which, added to the fall of 1.2 in imports of consumption goods, gives a multiplicand of 3, which is the correct one if, with a multiplier of 10, the desired increase in income is to be obtained.

If the propensity to import had remained constant, imports of consumption goods would have increased to 309. Since, in fact, they have fallen to 298.8, new domestic production has filled a demand of 10.2 that would normally have been covered by foreign goods. With an increase in income of 3 per cent, the additional demand for goods produced by domestic industry has increased by 18. Therefore, the increase of 30 units in domestic production has been distributed as follows: 1.8 in capital goods, 18 in lines already produced in the country, and 10.2 in goods that up to the previous period were purchased abroad.

To establish the ideal equilibrium contemplated in this model, the following conditions must be satisfied: (1) imports must be reduced either by protective measures or, more naturally, because of the quality and low cost of new domestic production; (2) in the previous period investments must have been properly directed, partly to create industries to produce goods to substitute for imports, partly to satisfy additional demand for goods already produced in the country and, also, in part, to place the economy in a position from which investments can be still further expanded; and (3) investments in the second period must increase only by a moderate amount (in view of the expansive effect of the substitution of imports).

At first sight, it seems impossible to achieve these requisites without

very detailed and strict planning and control. If, however, the increase in investments is kept within cautious limits and the new domestic goods to substitute for imports are produced on a competitive basis, we may rely upon the price system in the long run to achieve a reasonable degree of equilibrium, provided that the stock of gold and exchange reserves is adequate to take care of short-term fluctuations in the balance of payments.

In each of the other three models a deficit develops in the balance of payments. In the second model the propensity to import is kept constant and, since exports do not increase, monetary reserves fall, unless there are investments of foreign capital to cover the deficit. A constant propensity to import being given, internal investments may be allowed to increase (in fact they increase by 12 units), without producing inflationary pressures. An increase in internal investments being given, purchases of equipment abroad also increase (by 8 units), and the deficit rises to 17 units (8 due to increases in purchases of equipment, plus 9 due to the 3 per cent increase in consumption imports). In this model the increase in production of 30 units is subdivided into 18 units for the increment in consumption of goods already produced in the country and 12 units devoted to capitalization goods or services. There is no substitution of domestic production for imports. It is evident that this type of development cannot be maintained for a period of time longer than that permitted by previously accumulated reserves or by the importation of foreign capital (or by a combination of both factors).

The third model is similar to the second, except that all the changes are assumed to be on a larger scale, with the larger imports of capital goods being financed by an inflow of foreign capital or a sharp loss in reserves, or by a combination of both. Even though this model has only theoretical interest, it has been constructed to show what may happen in any economy if there is a very large increment of capitalization. It may be seen how consumption of goods of domestic origin has decreased in comparison with the initial period. This is due to the fact that such a substantial increase in domestic investment necessarily takes resources away from activities dedicated to the production of consumption goods. Logically, the doubling of domestic investment assumed in this model would require a remarkable increase in the number of persons employed in the production of capital goods, and this amount of labor would have to be taken away from consumption activities. The expansion of investment could also result in a transfer of equipment from one activity to another; for example, the use of railway freight cars to transport cement and stone instead of using them for transporting wheat and other consumption goods. Since the transferability of resources from one use to another is limited, especially in an underdeveloped country, it does not

seem possible that a very large increase in investment could take place without causing severe disturbances. In this connection it is interesting to note that, even where national resources could be substantially supplemented by foreign loans, an increase in investment exceeding certain limits may have inflationary effects.

In the fourth model a sharp decline in exports, from 340 to 240, is assumed. How could this fall in exports be compensated in order to keep monetary income at the level it would have reached if exports had not declined? There are four methods of doing this. The first would be to keep export industries at the old level of activity and stockpile or destroy the surplus. From a political and social point of view this would be the most expeditious way, because it is not easy to transfer employees and workers, many of them with specialized training, to other industries and locations. If the government purchases the export surplus, this working force is kept at its habitual tasks and monetary income at its original level. But if the foreign market does not recover, this method involves a total loss for the economy, that is, a loss of labor devoted to useless production and of the raw materials and fuel utilized in maintaining such production. Moreover, the country loses monetary reserves in maintaining its imports at their old level in spite of the fact that sales abroad have declined.

Another way to cushion the effects of the decline in exports would be to establish unemployment insurance that would allow the continuation of salary and wage payments to the personnel of export industries, even though this working force were actually not working. This solution too means, but to a lesser extent than in the previous case, a wasting of resources and a loss of exchange.

A third solution would be to let activity decline in export industries, but to transfer the personnel to other occupations, such as public works of easy construction not requiring additional importing of equipment. The country would benefit from the works executed, but it would go on losing reserves indefinitely.

The last possibility would be to transfer labor from export activities to other new activities in which productivity is as high as in the export industries. This would necessitate an extraordinary importation of equipment. The deficit in the balance of payments resulting from the decline in exports would thus be made worse by larger imports of equipment. This is the case described by the fourth model.

In the fourth model there is a great drain on the country's reserves, but investment of 269.5 would give, during the following period, an increase in income of about 80, that is to say, only 20 per cent less than the decline in exports. The solution given to the problem in this model naturally presupposes that in previous periods the country had accumu-

lated a large reserve of exchange, or else that it is able to obtain substantial loans from abroad to face the emergency arising from the fall in exports. Moreover, the model assumes a rate of industrialization impossible to reach in practice because of the lack of personnel, technical knowledge, organization, etc.; it presents a situation, however, that is highly interesting as a goal to be pursued.

It is relevant to add that in none of these development schemes, not even in the one in which we sought equilibrium, does the industrialization of the imaginary country depicted in the model provoke any decline in international trade. What really happens is a change in the composition of imports, consumption goods from light industry being replaced in part by capital goods and in part by more valuable consumption goods whose importation is made possible by the higher income level. This means that tariff increases in such countries would not necessarily restrict international trade, or export unemployment, or hurt highly developed countries, although they would harm some individual industries, compensation therefor being effected through an increase in purchases made from other industries in the same countries.

Pros and Cons of Inflation

So far the purpose of this paper has been to demonstrate the theoretical possibility of development without inflation or disequilibrium in international payments. So much time has been devoted to proving this theoretical possibility (and theoretical possibility by no means implies ease of application in practice) because of the conviction that inflation is not the most adequate method for promoting economic development. The analysis may appropriately be concluded by a brief presentation of the main arguments in favor of and against inflation as an instrument for development.

Arguments in favor of inflation

Inflation cannot be indicted outright, since there are some plausible arguments in its favor. The first is that by constantly raising the level of monetary income, inflation ensures a market for production and stimulates entrepreneurs to increase production because the constant increase in prices allows them to make larger profits. In general, but especially in its initial stages, inflation raises prices more rapidly than costs and increases the profits of entrepreneurs. Since inflation on the one hand ensures demand and on the other raises profits, it stimulates an increase in production. To stimulate an increase in production is tantamount to favoring development, because development is synonymous with increase in production.

Some of the defects of the second argument in favor of inflation have already been discussed. Inflation, it is maintained, accelerates, or may accelerate, the rate of capital formation. This presupposes that capital formation is achieved directly and immediately through the investments financed with the newly created money and, indirectly, through the decline in consumption on the part of most of the population which is caused by the rise in prices. Consumption may indeed decline in this way during the initial stages of inflation. But the decline will cease when important social classes, having become accustomed to inflation and foreseen its course, defend themselves by forcing an increase in their monetary income in line with, or in advance of, the price increase. When the rate of rise in prices is no greater than the rise in income of specific social classes, especially of wage earners, the process of acceleration of capital formation through inflation becomes largely, if not completely, ineffective. On the other hand, insofar as it discourages spontaneous savings and stimulates capital exports, inflation may, and in fact often does, reduce the rate of capital formation. It is difficult to give precise statistical evidence for this statement, but the capitalization estimates for Chile, Colombia, and Cuba quoted above seem to indicate clearly that, instead of intensifying capital formation, Chilean inflation has kept capital formation down to a rate lower than that observed in Colombia and Cuba.

The third argument in favor of inflation, which is not generally given publicity although many industrialists and economists understand it perfectly, is that inflation necessitates (and warrants) exchange control that may be used as additional protection for domestic industry vis-à-vis foreign competition. At a time when, in the commercial as well as in the monetary field, international agreements are directed toward a liberalization of world trade, the situation of disequilibrium in international payments created by inflation has been widely recognized as a reason for protecting domestic industry from foreign competition, either openly or covertly but just as effectively, without the risk of objection by the pertinent international organizations insofar as these measures are only of the magnitude necessary to equilibrate the balance of payments.

Arguments against inflation

The first argument against inflation is of a social nature: inflation reduces the real income of the poorer classes and increases that of the wealthy. To the extent that it actually accelerates capital formation through a reduction in the consumption of most of the population, inflation works in a direction opposite to the democratic ideal of social justice. To the extent that wage earners are able to defend themselves

and obtain salary increases at the same, or a higher, rate than the rate of rise in prices, the social argument loses strength, but at the same time the economic argument in favor of inflation is correspondingly weakened.

The second argument against inflation, which is economic in character, is that inflation tends to direct productive resources toward luxury consumption and profit-yielding investments which, economically speaking, are of low productivity. Resources are not directed toward the most productive activities, but toward those which produce more profit. Such is the case of the great apartment houses, office buildings, sumptuous residences, accumulation of inventories, etc. The general validity of this argument is, however, open to question. The International Monetary Fund Mission's report on Chile recognizes that the proportion of capital devoted to housing in that country is not excessively high; in fact, it is not higher than in other countries without inflation. To determine whether, or how far, there is, in practice, a justification for this objection to inflation would require a more systematic investigation than is possible here, both of the facts and of their interpretation, because the diversion of resources to low productivity activities might be a consequence of inadequate planning rather than of inflation.

The third objection to inflation is that it fosters the export of savings by those who wish to keep their resources liquid, not in domestic currency which is subject to a continuous decline in value, but in gold or a foreign currency of stable value.

The fourth objection, which has already been mentioned in the discussion of forced savings, is that inflation discourages spontaneous savings. In view of the difficulty of maintaining the value of liquid savings or of savings invested in fixed-interest securities, it provides a strong inducement for savers who do not wish to run the risks inherent in investments in common stocks to place their funds in real estate or to withdraw them from the country. These operations involve inconvenience and difficulty, so that savings are discouraged.

A fifth objection to inflation is that it makes difficult, well-nigh impossible, any long-term financing at fixed interest rates, a form of financing that is essential for development. The supply of capital for fixed-interest loans is considerably reduced and, insofar as there is any such supply, it is available only at high interest rates that attempt to compensate for the depreciation of the principal. Not only private credit is made difficult, but also and especially, public credit. Inflation makes it impossible to direct private savings toward government obligations. Once inflation has started and confidence in the future stability of the internal and external purchasing power of the currency is lost, government obligations have little attraction for investors. On the other hand,

the government is not willing to pay the rate of interest that would stimulate the saver to acquire its obligations because this would substantially increase the service of the public debt. The process of inflation tends to be self-perpetuating, in the sense that governments, unable to finance themselves from current savings, draw directly from the central bank, thereby increasing the quantity of money in circulation and the commercial banks' reserve base on which the commercial banks can expand the money supply even further.

The effect of inflation on public securities is extremely important, because both economic development and the maintenance of monetary and financial equilibrium require that the savings generated should be reinvested in the capitalization activities that are most productive for the country, and the nature of some of these activities necessarily requires that they should be carried out by the government. When the channeling of current savings toward the government is hindered, the opportunity is lost of using part of the country's spontaneous savings for essential ends. Thus, only fiscal savings, i.e., the savings of social insurance institutions and savings obtained through taxation, are available for government investments.

The sixth argument against inflation is the exact opposite of one of the arguments mentioned earlier in favor of it. Inflation, by fostering internal and external disequilibria, seems to necessitate the adoption of controls that serve to protect domestic industry from foreign competition. These controls are, however, two-edged instruments, even from the viewpoint of the protected industries, for they create obstacles, delays, frictions, and inconveniences of all kinds, which more than neutralize the benefits derived from the protection they are intended to afford.

The last general argument against inflation is that it tends to become cumulative and its indefinite continuance can then not be avoided. It becomes a sort of second nature to the economy of the country; it enters into the expectations of entrepreneurs, of labor, and of government; the country as a whole accustoms itself to the ways of inflation. To stop it without causing great disturbances in the economy is extremely difficult.

The strongest argument in favor of inflation is that it keeps up a high level of demand. However, if a gradual and steady increment in monetary income can be maintained, in line with the increase in productivity, and entrepreneurs become convinced that the rate of growth of monetary income and of demand will be maintained without serious fluctuations, the same advantages that can be obtained in part from inflation will be assured.

Anticyclical policy

Except in one model, it has been assumed throughout this study that exports were kept constant. This assumption cannot be maintained, however, for economies highly dependent on exports whose demand and value are likely to fluctuate widely. Since this is the position of most underdeveloped countries, where therefore the maintenance of a constant increment in national income becomes much more difficult, any study of the financial problems of development would be incomplete if it did not examine, even briefly, the need for anticyclical policies, both on a national and on an international scale.

The coordination of development policy with anticyclical policy requires the accumulation of gold and exchange reserves during periods of high exports. At first sight, this seems to be contrary to the requirements of development, because the accumulation of exchange means giving up the immediate utilization of part of the country's potential capacity for development. It means maintaining a rate of investment lower than the one which would bring imports up to the level of exports. Gold bars or dollar balances are stored away instead of being used to acquire equipment, or even consumption goods to increase the consumption of the labor employed in the capitalization works.

If, however, the maintenance of a constant rate of growth is essential to give private entrepreneurs confidence that their current investments will not suffer a partial or complete loss when the national income falls as a consequence of a contraction in exports, we are able to understand why it is advisable not to utilize all the financial and real resources of the country to raise the rate of development to a maximum; it is, rather, better to keep part of these resources for use when exports decline and it becomes necessary to cushion the contraction of monetary and real income, so as to keep machinery imports at the same level. In this sense, anticyclical and development policies are not incompatible, but complementary.

Stabilization policy could be more effective in the international than in the national sphere, because in the latter it is limited by the amount of reserves that each country may accumulate. Internationally, all possible efforts should be made to maintain stability in exports from underdeveloped countries through the maintenance of an effective policy for the stabilization of employment, income, and consumption in the highly developed countries. This would constitute a valuable contribution to the development of the Latin American countries. When these countries need no longer fear a violent contraction in their exports, they will have done away with a fundamental obstacle to their development.

Alternative approaches to international stabilization that have been

widely discussed include the creation of buffer stocks, setting up therefor international organizations with funds to purchase surpluses, and compensatory capital movements that would involve increased international lending during periods of decline in the exports of debtor countries. If the latter policy were to have genuine stabilizing effects, it would have to be publicized adequately beforehand and assurances given to the underdeveloped countries that a crisis in their exports would not be permitted to stop the process of their development.

Summary and Conclusions

The basic objectives of a financial policy for development may be summarized in the following terms:

1. Uniform and gradual expansion of monetary income in line with any increase in production capacity;
2. Increased domestic savings;
3. The channeling of savings toward investments which within the general plan of development are likely to have the maximum productivity;
4. Price equilibrium and exchange equilibrium.

The purpose of the analysis of this paper has been to demonstrate that the achievement of these objectives is not impossible. It will not be easy, but every effort should be made to approximate them as closely as possible. Economic development is a complex and difficult task, but it is not impossible. From a technical point of view, it is a task involving national education, necessitating a rapid and intensive incorporation of the technical knowledge of other countries. From an economic point of view, it means adequate planning, overcoming inertia, stimulating the initiative of the private entrepreneur, and setting up industries that may substitute for imports of foreign goods without too much harm to the domestic consumer. From the financial point of view, it means a gradual growth in investment, in the money supply, and in monetary income in line with the increase in productivity. This, we repeat, is a difficult, but not an impossible, task. The sacrifice of 10 to 15 per cent in present consumption and an adequate channeling of investment could promote a relatively satisfactory rate of growth, substantially greater than is now being attained in underdeveloped countries. With the help of foreign capital, this rate could be accelerated still further.

The Use of Special Exchange Rates for Transactions with Foreign Companies

W. John R. Woodley*

A VARIETY OF ELEMENTS is likely to be taken into account in establishing a set of multiple exchange rates for export proceeds. Some multiple rates appear to have as one of their objectives the avoidance of the inflationary pressures which would be generated if all exporters were given the advantage of a generally depreciated rate. Some emerge from the desire to subsidize particular exports, or from the attempt to gain government revenue by widening the margin between the buying and selling rates. Others may be traced to balance of payments pressure and indicate a conscious attempt to adjust export rates to the supply possibilities for various types of product. Still others may be regarded as devices for taxing particular companies or groups of companies in lieu of other forms of taxation. In any single country, more than one of these purposes may be involved, especially where there are several buying rates. It is, however, convenient to make a general analysis separately of each of the elements that may help to explain a given system of multiple rates.

In a number of countries which have multiple currency practices, certain foreign companies are exempted from the obligation to surrender to the local authorities their exchange proceeds from exports. The companies, however, need a certain amount of local currency to cover their local operating expenses. Where there is no unitary exchange rate, a decision has to be made about the rate at which this local currency will be provided in exchange for part of the companies' exchange proceeds. In a few such countries, e.g., Ecuador, the buying rate fixed for this purpose is the same as is applied to proceeds from the majority of exports. In others, however, the foreign companies are required to convert, at a special appreciated[1] rate, such part of their exchange pro-

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[1] Any use of the words "depreciated" and "appreciated" with reference to one of a series of multiple rates involves an implicit judgment as to the level of the equilibrium rate. This implicit judgment determines whether the spread of the rates should be regarded as a tax (subsidy) on exports or as a tax (subsidy) on imports. For the countries under discussion—with the possible exception of Venezuela—the rates applied to foreign company transactions are obviously far below an equilibrium rate.

ceeds as is required to purchase the local currency which they need. Chile, Syria, and Venezuela are current examples of such a situation, and the exchange systems of Bolivia, Iran, and Lebanon have in the past also included elements of a similar kind.

In some of these countries, the foreign companies exploiting a natural resource supply a substantial portion of the country's total foreign exchange receipts, and exchange relations with them are, therefore, of considerable importance for the country concerned. The difference between the appreciated rate at which the foreign companies are required to purchase their local currency and the effective buying rate for other transactions may be fairly small. For example, in Venezuela it is about 7 per cent of the rate applied to the oil companies. In Chile, on the other hand, the spread is very large; the rate now applying to most exports is more than five times the rate applying to purchases of local currency by the large copper companies. As considerable amounts are involved, and especially where the deviations from other buying rates are substantial, the practice may also be important for the foreign companies, as well as for the countries in which they operate. This aspect of multiple rate practices should be examined in order to have a clear idea of the problems involved and of the effects which are likely if the practice should be eliminated.

Nature of the practice

Where an appreciated rate is applied to the purchase of local currency to cover local operating costs, these costs are raised by the increased cost to the companies of acquiring local currency. The rate can thus be regarded as equivalent to a flat-rate tax on the domestic expenses of the company. The appreciated rate is, however, only part of the complex of financial relations between the company and the government. These financial arrangements arise either because the government of the country controls subsoil rights and, by definite concession agreements, grants exploitation rights to foreign companies, or because it selects foreign companies for special treatment on account of their size and relative efficiency, or, in effect, on account of their ability to pay special taxes. On the other hand, the companies are large, and at first because of their willingness to risk substantial amounts of capital, and later because of their importance in the economy, they have considerable bargaining power vis-à-vis the local government. Thus, the financial provisions cannot be regarded as being imposed unilaterally on the company by the government.

In Venezuela, Iran, Syria, and Lebanon, the relations between the oil companies and the governments are (or were) formalized in concession agreements. Although these vary considerably in detail, their principal

financial provisions are similar. They provide for payments, either in kind or in foreign exchange, by the companies to the government—usually royalties, income tax, and miscellaneous exploration fees—and, in return, usually exempt the companies from other forms of local taxation and from compliance with certain foreign exchange regulations applicable to other exporters. These agreements have been adjusted from time to time in favor of the governments, partly in recognition of the decreased risk borne by the company as it proceeds beyond the exploration stage, and partly as a result of the improvement in the country's bargaining power as the resource is further developed. Where unfavorable buying rates are used for transactions with the foreign concessionaires and where there are written concession agreements, the agreements do not, as a rule, specify the exchange rate applicable to company transactions. Thus, any tax revenue arising from the disposal of exchange acquired at the appreciated rate is revenue over and above that provided for in the concession agreement. Both the companies and the governments are, however, aware of this, so that the existence of this source of revenue may have been taken into account in past negotiations and is likely to be taken into account in any future changes in the agreements.

In countries other than those in which oil companies operate, e.g., Chile, there may be no formal concession agreement between the government and the company. Nevertheless, the government regards company taxation as a special problem and, in view of their size, the companies are often consulted before the government changes the financial provisions that affect them. Thus, in all cases the unfavorable rate must be regarded as only part—and sometimes, as in Venezuela, a minor part—of the financial relations between the government and the company.

No general statement is possible about the extent to which the use of special rates for foreign company transactions has been associated with balance of payments difficulties, although the use of an appreciated rate probably means that the country derives more exchange from the companies than it would if a uniform, more depreciated rate were used. In Venezuela, there was for a considerable time a payments surplus on current account with practically no effective restrictions on payments. In Chile, on the other hand, payments difficulties have led to both depreciation and restrictions on imports. If the unfavorable rate for foreign companies were eliminated, but substitute tax measures were used to bring in from the companies the same amount of revenue previously given by the exchange spread, the exchange receipts of the countries would be unaffected. Only if elimination of the appreciated rate without any substitute measure were being considered would the

effect on exchange receipts be substantial in some countries, and in these cases the effects on the government budget probably would be equally serious.

Economic basis for incidence of this practice

The decision to apply special exchange rates to the transactions of foreign companies has no doubt in each case been dependent in part upon the special historical circumstances of the country concerned. The attitudes of the governments, as well as the nature and position of the companies, have played a part in determining whether appreciated rates shall be retained, and are also likely to affect the extent to which such practices are used in future. Certain generalizations may, however, also be made about the conditions that have favored the adoption of these practices, though in any particular country not all of these conditions may be completely satisfied. Historically, the adoption of special exchange rates for foreign company transactions has been in most cases an expedient which has made more acceptable the depreciation of the exchange rate for other transactions. While for most transactions the rate has been allowed to depreciate, it has been thought convenient to maintain it for foreign company transactions at the former level, partly in order to prevent a decline in exchange receipts. However, the taxation and exchange receipts elements involved in the use of unfavorable rates have also tended to have increasing importance from the point of view of monetary and fiscal policy. Thus, although the "partial" depreciation started as a response to balance of payments pressure, the maintenance of a special rate for foreign companies usually soon came to be associated with budgetary difficulties.

The outstanding characteristics of the countries which apply unfavorable rates to foreign companies are usually those associated with a comparatively low level of economic development. In such circumstances, the foreign company tends to stand apart from the rest of the economy, with unique standards of production, accounting, and pricing policy. In some cases, primitive producing units, many of which may not enter the money economy at all, may play an important, and sometimes even a predominant, role in the rest of the economy. As a result of the contrast, the relations between the two kinds of unit and the world may also be vastly different. As a consequence, an exchange rate which provides a satisfactory link with the international community for one sector of the economy may not be satisfactory for the other. This is the basic explanation of the ability of the foreign companies to operate under the apparent handicap of a sharply appreciated rate. In their international economic relations, moreover, these countries are likely to be dependent

upon relatively few exports, which are the products of primary industry. Also, their revenue systems have to be adjusted to existing tax potentials and customary expenditure patterns, and thus are unlikely to be particularly suitable for taxing foreign companies. The simple administrative structure of the tax system favors the establishment of taxes which vary with some easily measurable index.

A second general feature is that the countries which have adopted this practice are relatively small and that the primary natural resource being exploited requires large capital investment. The smallness of the country means that the foreign companies have special importance for the prosperity of the economy, both directly through the employment they provide and indirectly through their contribution to government revenue. Heavy investment is required partly because the producing unit must necessarily be large to compete in world markets, and partly because the underdeveloped nature of the economy frequently means that considerable outlays for transportation, power, etc., are required.

A third characteristic is the dominant role of the foreign companies in the general balance of payments position. When foreign companies play a small role in the domestic economy and in the balance of payments position, changes in the exchange rate can easily be considered without singling out these companies for special treatment. On the other hand, when they are responsible for the larger part of the country's export receipts, it is scarcely possible to consider a change in the exchange rate without taking special account of the individual positions of the companies. This has meant that, when the exchange rate was changed, the foreign companies were often given a rate different from that used for other transactions.

A fourth characteristic is that postwar economic conditions have been particularly favorable for the commodities produced by the firms concerned. Petroleum companies are involved in the majority of cases, while mining and fruit companies are also important. Countries with resident foreign companies producing commodities, e.g., gold, which have not been subject to favorable conditions have not applied special rates.

A fifth feature is that the companies concerned operate under monopoly or quasi-monopoly conditions. Entrance to the industries is restricted in a number of ways—because the existing companies have their raw materials covered by concession agreements, because large amounts of capital are required, or because marketing and transportation problems have led to vertical integration. Because of this quasi-monopoly position, the countries in which the companies are resident do not benefit from any tendency to bid up the prices of the natural resources used by the companies. As a consequence, taxation of the

companies appears to be one of the most effective ways of benefiting from their existence.

The factors which have been enumerated above should not be interpreted as implying that there is any hard and fast line to be drawn between countries which have adopted special exchange rates for foreign company transactions and those which have not. In general, however, there is no strong inducement to resort to this practice in more highly developed economies, where there is no sharp differentiation between the economic efficiency of the various productive units. In such economies foreign companies are not in an especially favorable position for paying appreciated rates for domestic currency, and as the taxation system is likely to be well developed, and so constructed that the foreign companies can be taxed in the same way as other companies, there is no need to use the exchange system as an instrument of taxation. In a more diversified economy, moreover, exports are likely to consist of a wider group of commodities, so that fluctuations in export earnings will not be so closely associated with the operations of certain foreign companies. Finally, where the importance of foreign companies in the balance of payments positions of the countries concerned is not outstanding, there is no strong inducement to accord unfavorable treatment to them. When the exchange receipts earned by the foreign companies are less important, the rates applied to the foreign companies are only a minor issue when changes in the exchange rates are considered; thus, the foreign companies are less likely to be singled out for special treatment.

Effects of the Special Rates

Not only the general economic characteristics of the countries using special exchange rates for transactions with foreign companies, but also the effects of these special rates should be examined. A discussion of the distinction between the use of appreciated rates for foreign companies and their use for some major export product which is produced domestically will throw further light on some of the issues involved and will also provide a basis for distinguishing between these practices for policy purposes.

Contrast with other uses of appreciated export rates

Many countries with multiple buying rates apply appreciated rates to their chief export products. Insofar as the problem is that of a major export product or group, the question arises as to whether it is materially affected by the fact of foreign ownership. In other words, is there any significant difference between a situation such as that of Colombia or

Thailand where coffee or rice are produced and exported by local citizens, and that of Venezuela or Chile where petroleum or copper and iron are produced and exported by foreign companies? In both cases, a single export accounts for a large proportion of the country's exchange earnings, and exchange from the export is subject to a penalty rate indicating considerably lower costs than are involved in other export industries.

Taxation of the nonresident exporter adds to the foreign exchange resources of the country to the extent that the tax is not shifted to local factors of production or to domestic consumers of the companies' products. The increased exchange available may be used to finance additional imports with their attendant deflationary effects. If, however, government expenditures rise as a result of the tax receipts in the form of foreign exchange, the deflationary impact of the increased exchange sales may be offset. When, on the other hand, the export is made by local firms, there is no effect on the distribution of incomes as between countries unless the tax can be shifted forward. A tax upon local exporters has direct anti-inflationary effects, as exporters' incomes are kept lower than they would otherwise be. The anti-inflationary effect of the tax may be approximately offset in the same fashion as a tax on foreign producers, if government expenditures rise by the amount of the increase in tax revenue.

The difference in the division of income as between countries also has important implications for other tax considerations. In general, to tax the income of a foreign concessionaire is politically easier than to tax the income of a local producer. In many cases, also, taxes on a foreign company can be administered more easily and more successfully simply because the tax source is a single firm or a small group of firms.

If the country receives an important part of its exchange receipts from the conversion of exchange by a foreign company, it may find that rising prices abroad have a particularly serious effect on its exchange position.[2] Since the company's conversion of foreign exchange to meet local production costs varies mainly with the changes in the volume of its production, rising prices abroad have only an indirect impact on the country's exchange receipts. If increasing export prices expand domestic receipts from exports other than those of the foreign company, demand for imports, and therefore for foreign exchange, is likely to increase by a proportionately greater amount than the increase in total exchange receipts. The seriousness of this will be moderated to the extent that the company also pays taxes, e.g., income tax, which vary with the company's position, because under these circumstances exchange receipts will rise as the export proceeds of the company increase. The opposite

[2] Other forms of taxation on the companies may be such as either to compensate for this effect or to accentuate it.

trends develop if prices abroad fall; payments by the company fall only if production is reduced and the real value of exchange increases as the prices of the country's imports fall.

Another difference which may be of some importance, depending upon the structure of the country, is the timing of receipts by the exchange control authorities. When a foreign company is involved, royalty payments may be made at intervals, and tax payments are likely to be concentrated at the end of the financial year. In contrast, when local producers are involved, surrender of export proceeds corresponds with the actual export, and thus the flow of exchange may be quite regular, depending upon the seasonal factors involved. This difference is not likely to create problems unless import demand tends to be concentrated at particular times and exchange reserves are very low, so that interim financing is difficult.

The chief difference which emerges from this comparison is that the direct anti-inflationary impact of an unfavorable rate for local producers of a major export has no counterpart in the application of a penalty rate to foreign concessionaires. In the latter case, tax revenue is also involved, but it means primarily a redistribution of income and exchange between countries. The anti-inflationary results of such a tax follow indirectly from the larger imports which can be financed with the exchange derived rather than from any reduction in domestic incomes. This means that, if a distinction is to be made between these two cases, the analysis must be carried beyond the simple fact that both measures result in revenue to an analysis of the effects of the revenue collection.

Effects on other countries

Appreciated rates for foreign companies appear to do little harm to the commercial interests of other countries; in fact, they may favor them. Studies made of some of the individual countries indicate that these rates have minor effects on the distribution of the expenditures of the foreign companies between domestic and foreign sources. In most cases, the greater part of local expenditure is for labor, while foreign expenditure is for goods not produced domestically. Thus, in these cases, the appreciated rate reduces local expenditure by the companies only to the extent that it affects the margin between the use of capital equipment and of labor as productive factors. In any event, the preference is in favor of foreign countries and against the interests of local producers.

The appreciated rate is accepted by the foreign company as a datum in its decisions as to the relative proportions of domestic labor and imported capital to be used in the productive process. A less appreciated rate might result in more labor and less capital being employed. Thus,

from the point of view of productivity considerations, the appreciated rate can be regarded as having some distorting effects. On the other hand, if full employment has been attained and there is an inflationary situation, as the result of, for example, a development program, the government may regard the diversion of labor from the foreign companies as a positive advantage. Because the appreciated rate raises the costs of domestic factors, production costs will be higher than they would be with a less appreciated rate, and under some conditions this may have some effect on international prices. The exchange rate may also affect the decision of foreign companies as to the location of investment and the rate of exploitation, although this would be so only if the tax elements of the rate could be regarded as additional tax burdens. More specifically, oil companies may operate in one field in preference to another or may develop fields at varying rates in response to differences in costs which depend in part upon the exchange rates available to them. On the whole, however, the exchange rate is likely to be a relatively minor factor in making such decisions.

The use of penalty rates for transactions with existing companies probably does not discourage to any significant extent the entrance of new foreign firms, because entrants are free to negotiate with regard to the rate to be used by them. In Venezuela, for example, the recently established foreign-owned iron companies use the commercial export rate, while in Chile the rate for new capital is much more depreciated than the rate applicable to the conversion of foreign exchange by existing companies for working purposes. Penalty rates for existing companies may lead new firms to fear discriminatory treatment in the future, but this is probably of little significance. In only one case, in Iran, has evidence been found of the classification of other exports at the penalty rate in order to avoid complaints of discrimination by the foreign company. Thus, this harmful effect is not sufficiently widespread to require consideration from the standpoint of general policy.

The conditions which the companies are able to enforce in determining the currencies to be used in payment for their exports are another factor to be taken into account in assessing the effects of penalty rates on other countries. In each case where an unfavorable rate is applied to a foreign company, the rate applies only to local costs and the individual company is free of surrender requirements. Nevertheless, U.S. companies demand payment for their exports in U.S. dollars, while British companies operate in conformity with the sterling area exchange arrangements. If the surrender of exchange proceeds to the government of the country in which the company is resident were required, the government would establish surrender requirements in accordance with its own purposes rather than those of the companies. Thus the regulations

probably would be formulated to accord with the payments requirements of the countries, including the need to supply the foreign company with exchange for remittance of profits. In the case of U.S. companies, the government might be prepared to accept some non-dollar receipts, depending upon its payments requirements and market conditions for the product. During 1951, for example, copper companies in Chile were selling a certain amount of copper to Chileans for U.S. dollars, and this copper, after being processed, was exported to Europe where the prices were higher. For British companies, if the country required surrender of dollar proceeds for all of the exports of the company and supplied sterling to the company for remittance of profits, sterling receipts under present arrangements would be replaced by dollar receipts. This might change the pattern of the country's imports, the currency composition of profit remittances, and the currency required for payment of the company's exports. Thus the effects of the existing practices are to simplify substantially the operations of U.S. firms and to permit sterling area payments arrangements to extend to companies outside the sterling area itself.

Effects on the country where the companies are resident

Conversion at the appreciated rate applicable to the foreign companies involves a tax on all company expenditures within the country. To the extent that these payments are fixed in amount in local currency, the unfavorable rate increases the country's exchange receipts. In some cases, however, imports can be substituted for domestically produced commodities, while in others intensified use of imported capital goods can reduce dependence on domestic factors. These factors tend to make the company's demand for local currency less inelastic. It is, however, difficult to determine how far these effects are important, and probably in all cases any depreciation of the rate applied to the companies, which was not accompanied by a substitute tax, would result in the country's losing exchange.

A spread between the rate applied to foreign companies and other buying rates means that the foreign companies have a stronger incentive to operate in the foreign exchange black market; it is, however, unlikely that they will do this, because, among other reasons, the scale of their transactions—if they were to be significant for the company—would be great enough to have very noticeable effects on the black market rate, and so be immediately evident to the exchange control authorities.

The absence of surrender requirements for the companies may be regarded as a means of simplifying exchange control in the sense that the company avoids the need for acquiring central bank permission for

remittance of profits. The company may be required to convert U.S. dollars to obtain local currency, and this assures the country of hard currency receipts. On the other hand, any foreign expenditures made by the companies escape scrutiny by the exchange or trade control authorities and thus are not subject to the same criteria as other foreign exchange expenditures. If companies were to be required to surrender exchange and to operate within the existing structure of exchange rates and controls, they might purchase their own imports from different sources, depending upon the exchange position of the country, its payments agreements, etc. In some cases, the country may receive sterling from the foreign company and thus grant preference to imports from countries which accept sterling in payment. If surrender requirements were imposed in these cases, it might be possible under some circumstances for the country to increase its dollar receipts.

Another effect of the present exchange requirements is central bank acquisition of all exchange sold by the company. The bank can regulate the flow of this exchange to the market and thus prevent undue accumulations of exchange in the hands of commercial banks and individuals which might exert downward pressure on the rates. However, this is probably only an incidental benefit from the use of the appreciated rate, and similar results could be obtained by exchange control.

The major effect on the country is the substantial revenue obtained by the government from the sale of exchange acquired from the company at an appreciated rate. Part of the exchange acquired is used by the government for its own imports. This can be regarded either as a subsidy provided by the foreign company for government imports, or as a means of reducing government expenditures by buying cheap exchange from the company. Revenue is transferred to the government as a result of the central bank's profit from the sale of the remaining exchange at a higher import rate. There is no reason why this revenue should be regarded in a different way from other government receipts, and, therefore, no special consideration need be attached to government disposal of it.

Tax considerations

Since the use of special rates for foreign companies results in revenue for the government, consideration of the revenue obtained plays an important part in any assessment of this type of practice. The issues involved can best be discussed by comparing this type of taxation with the income tax. The comparison is purely for illustrative purposes and is not meant to imply either that the income tax is the only substitute, or that under all circumstances it is the best of the alternatives. Further-

more, the problem to be considered is the form of taxation—the level of taxation being assumed to remain constant over a period of time.[3]

One of the obvious advantages of an unfavorable buying rate as a taxation device is the simplicity of its administration. The central bank merely sells domestic currency to the foreign company, and, when it disposes of the exchange at a higher rate, a profit accrues which either can be retained by the central bank or turned over to the government. If the exchange is used for government imports, both the tax and the subsidy to government imports are purely automatic. Because the foreign company's needs arise quite regularly, the central bank receives a steady inflow of foreign exchange.

In contrast to this, an income tax might present considerable administrative difficulty. In some cases, the government is not sure what the company's income is. This may be partly the result of the intransigence of the company, or it may arise from the difficulty of isolating the income attributable to operations within the country. In any case, some governments fear that the companies would evade income tax. Another result of the substitution of other forms of taxation would be that revenue would accrue to the Finance Ministry and would appear in the budget as general revenue. This might have serious effects on the earnings position of the central bank and make it financially dependent upon the government. Moreover, expenditure might be affected, if the source of the revenue were more apparent, particularly where the exchange is used, in effect, to subsidize government imports. The revenue would accrue in the form of receipts from income tax, and, if subsidies were to be given to government imports, funds would have to be appropriated directly to the departments concerned. Finally, if the income tax were paid in quarterly installments or at the end of the year, the timing of the government's receipts of foreign exchange might be less convenient.

Another semi-institutional factor which may be of some importance is that, in some countries which impose an income tax in combination with royalty payments, the rates are based on the proposition that an equal division of profits between the company and the government is "fair" and "reasonable". Since the unfavorable buying rate represents

[3] In Chile and Venezuela, where there is an income tax on the operations of foreign companies, elimination of the appreciated rates should produce a partially compensating increase in income tax receipts. A more favorable buying rate would reduce the companies' costs and consequently should produce an equivalent increase in profits. Thus, if the income tax rate is 50 per cent, half of the revenue lost as a result of the removal of the unfavorable rate may be recovered, on the assumption that the companies' costs fall by an amount equal to the tax reduction. An equivalent income tax as used here means one which produces revenue equal to the receipts from the unfavorable rate, including the revenue resulting from the larger tax base.

an additional levy on the company, incorporation of it in the income tax would require breaking the rule of equal sharing in profits. It would appear, however, to be only a matter of time before some other division, e.g., sixty per cent-forty per cent, will become equally acceptable, especially since the unfavorable rate presently has the same effects.

The present system of penalty buying rates produces a steady stream of revenue dependent chiefly upon the level of operations of the company. If an income tax were used to produce about the same amount of revenue, receipts might vary considerably from year to year as a result of fluctuations in the earnings of the company. Thus, dependence on the appreciated rate as a tax device tends to stabilize the level of government receipts. It also tends to place a highly variable tax load on the foreign company, becoming heavier relative to income as prices for the products sold by the company fall and lighter as export markets improve. Its effects are thus the opposite of the countercyclical effects usually desired in a tax. This variation in the tax load has the further effect of introducing instability into the financial relations between the company and the country, because it raises the question of the appropriateness of the tax burden on the company whenever the company is operating in exceptionally profitable or exceptionally unprofitable situations.

The recent trend has been for exchange profits to grow. If the central bank's average selling rate is depreciated, the profits from the sale of exchange purchased at a fixed rate will increase. With an income tax, there would be no accidental changes in revenue as the central bank's average selling rate fluctuated. To the extent that the selling rate tends to depreciate steadily, the larger revenues which would result from a fixed buying rate would be foregone by the use of an income tax. It is questionable, however, whether changes in the average selling rate in response to the over-all balance of payments position and the measures designed to counter payments pressure should be the determinant of the level of taxation.

Some of these effects of an appreciated rate would not arise if the same amount of revenue were derived from an income tax. The present rate practice may favor imports by the companies at the expense of purchases from domestic sources, the importance of this depending largely upon the size of the spread and the composition of the company's imports. In addition, the unfavorable rate can be regarded as a direct flat-rate tax on costs. As such, it tends to reduce the level of operations of the companies, and may favor production in other countries where such taxes are not imposed. In contrast, an income tax would have no effect on the distribution of company expenditures between domestic and foreign sources. Thus, as a result of the elimination of the unfavorable rate, the

company's demand for both labor and domestic products might rise. Although, as has been noted above, it is not easy to determine how far these considerations are of practical importance, this increase might conceivably be significant for companies planning further capital investment or for companies which import commodities produced domestically. Moreover, the income tax would have no effect in the short run on the company's scale of output. The income tax would be paid out of earnings, which the company would attempt to maximize without regard to the tax. Under these circumstances, the output of the companies would probably be larger. On the other hand, heavy income tax might in the long run lead to diversion of investment to other countries, or to other industries, and so curtail output.

Exchange rate considerations

When a country with an appreciated rate for foreign companies is considering the unification of its rate structure by means which will depreciate the rate applied to foreign companies, the loss of exchange revenue which is likely to be involved, if this action is taken by itself, must be taken into account. Similarly, when a country with a unified rate is considering the possibility of general depreciation, it is likely to pay special attention to the loss of exchange which will result from depreciation of the rate applicable to the foreign company. If other tax measures are ignored, it appears to be a general rule that, within practical limits, the exchange earnings derived from the company tend to vary directly with the degree of appreciation of the rate applied to its transactions. Thus, from this point of view, there is considerable advantage for the country in maintaining an appreciated rate, or in introducing multiplicity when depreciation is necessary.

If, on the other hand, there are alternative forms of taxing the companies and these are included in the new financial relations with the company, depreciation of the rate applicable to the company in order to unify the rate need not result in any loss of exchange revenue, since all taxes are commonly paid in foreign exchange. Thus, as far as exchange receipts are concerned, there is no apparent difference between the appreciated rate and a depreciated rate with an offsetting tax. Moreover, the basic position of the company remains unchanged, the reduced cost of domestic expenditures being offset by larger tax payments.

The situation is somewhat different if the foreign company is a fairly important source of exchange and the country is considering depreciation in order to ease payments pressure. Under these circumstances, there will be a strong inducement to introduce multiplicity through depreciating all the rates except the one applicable to the foreign com-

pany. Since the general presumption is that the factors creating the need for depreciation—e.g., domestic inflation or depressed foreign markets—apply to both domestic and foreign companies, there would appear to be no basis, so far as exchange considerations are concerned, for treating the foreign companies differently from other trading interests.[4] Under these circumstances, the establishment of an appreciated rate would mean increased taxation. Such an increase in taxation arising because the government wishes to depreciate the rate applicable to other transactions would appear to be purely fortuitous, and without any relation to traditional taxation criteria. The problem of general depreciation plus compensatory taxation is not likely to arise in many cases, since tax limits are provided under the financial arrangements between the company and the government.

In essence, the argument here is that failure to depreciate the foreign company rate in accord with other rates represents increased taxation of the foreign company. This increased taxation does not result in an increased financial burden on the company, but it means treatment less favorable than that granted to other firms in the economy. While there is no apparent reason why foreign firms should not be the object of special taxation, the linking of variations in this type of taxation with changes in the exchange rate does not appear to be appropriate.

Another aspect of exchange rate policy which is of rather limited application is concerned with the effects on other industries in the economy of an exchange rate which is suitable for the foreign company. If the exchange rate is established in such a way as to provide approximate balance between current foreign exchange payments and receipts, and if the foreign company is large relative to the rest of the economy, the rate may be so low as to prevent the development of other export industries or of import-competing industries. The situation in Venezuela could be represented in this way. The rate which applies to the oil companies, while apparently tolerable for them under present circumstances, is evidently too appreciated to encourage other export industries or to stimulate domestic import-competing industries in spite of very high tariff protection. This reflects the great discrepancy in relative efficiency between foreign and domestic firms and raises the issue as to whether the exchange rate should be set in relation to the foreign company. Depreciation would make exporting more profitable and result in higher local prices for imports—both of which might encourage the expansion of domestic production. Thus, the general problem arises as to whether development of domestic industry and

[4] Although the exchange rate affects only local costs for the foreign company while it affects receipts for local producers, this difference does not suggest that conditions leading to depreciation would have effects on foreign companies which differ markedly from those on domestic companies.

diversification of exports are sufficient grounds to warrant depreciation even though no payments difficulties would arise at a rate appropriate for the foreign companies.[5]

The effect of the exchange rate on the payments position may not be a very helpful criterion in this case because there may be a whole range of rates which are compatible with payments equilibrium. As the rate depreciates, proceeds from domestic exports may rise and expenditures for imports fall, thus offsetting the loss of exchange from the foreign company. This may occur through a considerable range of rates, depending upon the response of domestic producers to more favorable rates and the reaction of importers and producers selling import-competing goods. If compensatory tax measures are imposed on the company, even the exchange receipts from that source may be left unchanged and so the range of rates compatible with payments equilibrium may be very wide.

If compensatory tax changes are excluded, depreciation of the rate through the range compatible with payments equilibrium, while it may aid domestic industry, involves the disadvantage of less favorable terms of trade with the foreign company. Moreover, to the extent that depreciation creates inflationary pressure, there arises a need for control measures, in the absence of which the stimulating effects of the depreciation would be lost. Alternative forms of assistance to domestic industries, such as direct or indirect subsidies, might achieve the same results without creating the problem of possible inflation and without losing tax revenue from the company. If compensatory taxes were arranged with the foreign company, however, there would be no loss of revenue for the government, i.e., no deterioration in the terms of trade between the company and the government.

Since depreciation in order to stimulate domestic industry may have both advantages and disadvantages, each decision has to be made in the light of the circumstances of the particular case. Depreciation has the advantage of providing a uniform effect on all industries within the economy, and of permitting price and income developments to determine the further development of the economy. On the other hand, great care has to be exercised to be sure that development is, in fact, being retarded by the current exchange rate and that conditions are favorable for the expansion of domestic production in response to a more depreciated rate. It appears likely that in many cases the obstacles to the development of domestic agriculture and industry are much greater than could be overcome by a moderate depreciation.

[5] This problem is somewhat similar to the one discussed early in the postwar period as to whether variations in employment should be included in the concept of an equilibrium rate of exchange. The consensus appeared to be that an equilibrium rate had to be defined as one that equilibrated current payments with full employment domestically.

Short-Run Fluctuations in U.S. Imports of Raw Materials, 1928-39 and 1947-52

G. Lovasy and H. K. Zassenhaus*

THE PURPOSE of this paper is to help to explain the movement of imports of raw materials into the United States. Though both the nature of the problem and the statistical material available make it impossible to offer more than a tentative contribution, the points analyzed below appear to throw some useful light upon the problem.

Earlier studies[1] of the relevant *annual* statistical data have established two facts: (1) in the United States there is a close relationship between raw materials imports and domestic manufacturing production, with an elasticity between these two variables that is close to unity; (2) though the correlation between imports and domestic output can generally be improved by adding relative prices (i.e., import prices relative to domestic prices) as an explanatory variable, the elasticity of imports in respect to relative prices has been found to be small.[2]

It is clear, therefore, that variations in domestic output of manufacturing production—i.e., output which absorbs raw materials—are mainly responsible for variations in raw materials imports. This is true for quarterly as well as for annual variations. The treatment of possible supplementary explanatory price variables, however, runs into several difficulties. To the extent that import prices are independent, rather than dependent, variables in respect to import quantities (considering the volume of U.S. demand, this is far from certain for a number of import commodities), short-run price fluctuations are likely to induce speculative imports and then lead to inventory changes (in the *same* direction that prices change). Gradual, long-run price movements, on

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[1] The latest is J. H. Adler, E. R. Schlesinger, and E. von Westerborg, *The Pattern of United States Import Trade Since 1923: Some New Index Series and Their Application* (Federal Reserve Bank of New York, 1952).

[2] This is in contrast to the findings for U.S. imports of finished manufactures, which indicate that elasticities with respect to appropriate price variables are larger than unity.

the other hand, may be expected to influence the "mix" of imported and domestic products in the volume of total raw materials absorbed by domestic production. This "mix" will affect imports unless it is offset by changes in the ratio of total raw materials imports to product output. But the short-term and long-term price effects will tend to counteract each other, and quarterly price and quantity data are unlikely to register them separately. From the point of view of testing whatever results there may be, however, quarterly observations are desirable.

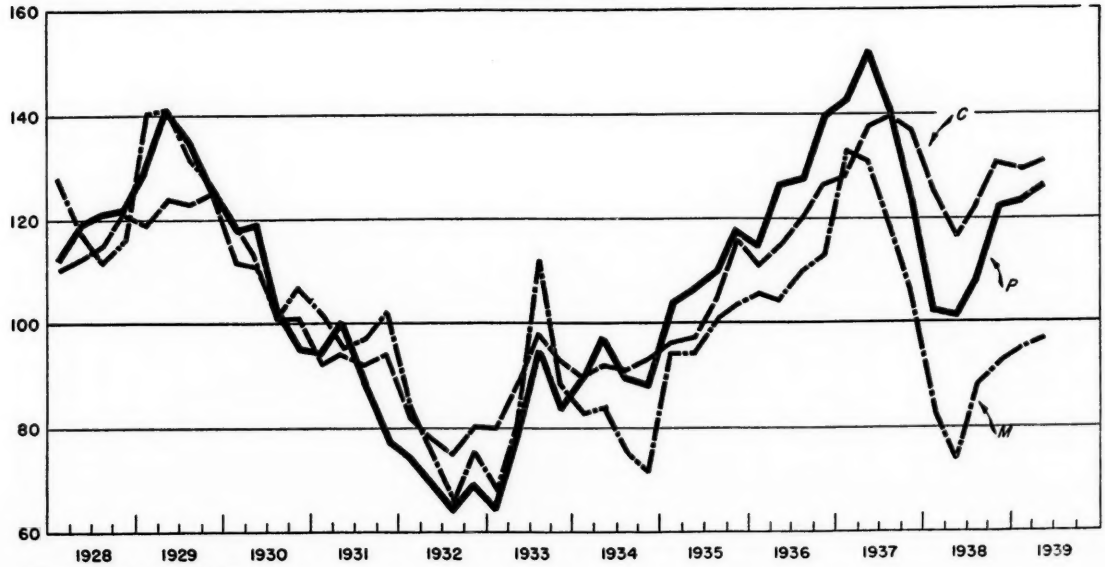
Even a cursory examination of Charts 1 and 2 indicates that changes in domestic manufacturing production do not fully explain changes in the quantity of raw materials imports. Both in several interwar years and after 1947, the quantities of imports fluctuated more widely than domestic output. This suggests that, instead of some explicit price variable, one or both of two other explanatory variables should be tested in addition to domestic manufacturing output: domestic raw materials inventories, and domestic output of raw materials which may be considered competitive with imports. Since, unfortunately, no adequate inventory data are available for the years 1928–38, only the latter of these two variables can be tested; here it seems appropriate also to give consideration to a linear trend.

The relationships suggested between imports, inventories, and domestic output of competing materials may be thought of quite simply as follows. A significant rise of domestic manufacturing (i.e., raw materials absorbing) output will be made possible in the first instance by a corresponding increase in the domestic output of raw materials, provided that this increase is not checked by the fact that domestic raw materials output is already close to capacity; the absolute increase of imports of raw materials will be less than the increase in domestic output of such materials, and it possibly will occur later. In conditions of high domestic employment and near-capacity production, however, imports are likely to be drawn on to a greater extent, and possibly earlier, than domestic raw materials supplies. The upward movement of (real) imports will then be proportionally larger than that of domestic import-absorbing output. On the other hand, a drop in domestic manufacturing production is likely to lead to a reduction of imports rather than of domestic raw materials output, especially under conditions of unemployment and of low domestic output relative to capacity. Here again, imports will show a proportionally wider variation than domestic manufacturing production.

At the same time, upward (downward) movements of domestic manufacturing production will, unless foreseen by domestic producers, almost immediately lead to a decline (rise) in the ratio between manufacturers'

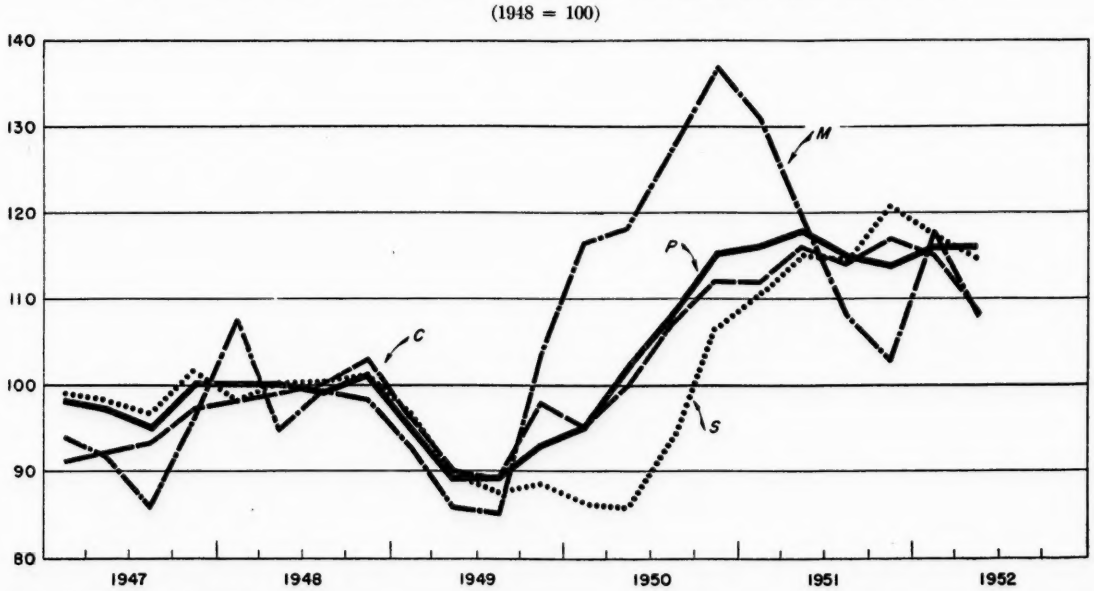
CHART 1. INDICES OF THE VOLUME OF U.S. IMPORTS OF CRUDE AND SEMIMANUFACTURED MATERIALS (M), DOMESTIC OUTPUT OF MANUFACTURED GOODS (P), AND DOMESTIC OUTPUT OF IMPORT-COMPETING CRUDE AND SEMIMANUFACTURED MATERIALS (C), QUARTERLY, 1928–39[1]

(1928–35 = 100)



[1] Based on data in Table 1.

CHART 2. INDICES OF THE VOLUME OF U.S. IMPORTS OF CRUDE AND SEMIMANUFACTURED MATERIALS (M), DOMESTIC OUTPUT OF MANUFACTURED GOODS (P), MANUFACTURERS' STOCKS OF PURCHASED MATERIALS (S), AND DOMESTIC OUTPUT OF IMPORT-COMPETING CRUDE AND SEMIMANUFACTURED MATERIALS (C), QUARTERLY, 1947–52[1]



[1] Based on data in Table 2.

raw materials stocks and their current output of finished products. Raw materials imports are likely to be stimulated as soon as a fall in the stock-output ratio begins to carry the ratio below what domestic manufacturing producers may consider a "normal" level. Similarly, imports may be depressed by a rise in the stock-output ratio unless the increase is insufficient to raise the stock ratio above "normal". Thus, the stock-output ratio could be expected to move inversely to imports in a succeeding period, and this inventory mechanism could exaggerate import movements compared with those of domestic manufacturing production.

Several points should be noted by way of qualification of this mechanism. First, to the extent that the movements of both the manufacturers' stock-output ratio and the domestic competing raw materials output reflect the effects of changes in (relative or absolute) import prices, these changes are in effect implicitly allowed for in the explanation attempted here. This—apart from statistical difficulties involved in computing an adequate price index corrected for import duties—diminishes the force of a possible objection to the procedure suggested here, on the ground that price effects have been neglected. Second, raw materials imports are subject to long-run influences—such as the general improvement of efficiency in the use of raw materials resulting from technical advances. Especially in the interwar years, these factors appear to have caused the declining trend of imports when compared with domestic manufacturing production. This trend has been explicitly allowed for in the explanation attempted here and will be discussed further below. Third, no attempt has been made here to separate the influence of tariff changes. Except for a few raw materials (wool, copper), this influence was probably minor. It could be investigated with some hope of useful results only by examining individual commodities separately. The same applies to the effect of relative price movements on the substitution of imported for domestic raw materials. Finally, since quarterly data are used throughout this study, the question of possible seasonal variations in imports arises. For the immediate postwar years, but not for 1928–38, the existence of such seasonal variations can be established.

Statistical Material

The hypotheses described above have been applied to the time series for the interwar and postwar periods, shown in Charts 1 and 2 and in Tables 1 and 2.

Imports (*M*)

The import series is the sum of recorded imports for consumption of crude materials and semimanufactures as defined by the U.S. Depart-

TABLE 1. INDICES OF THE VOLUME OF U.S. IMPORTS OF CRUDE AND SEMIMANUFACTURED MATERIALS (M), DOMESTIC OUTPUT OF MANUFACTURED GOODS (P), AND DOMESTIC OUTPUT OF IMPORT-COMPETING CRUDE AND SEMIMANUFACTURED MATERIALS (C), QUARTERLY, 1928–39[1]

(1928–35 = 100)

		M	P	C	M/P	C/P
1928	1	128.1	112	110	114.4	98.2
	2	117.8	119	112	99.0	94.1
	3	112.3	121	115	92.8	95.0
	4	116.4	122	121	95.4	99.2
1929	1	140.5	129	119	108.9	92.2
	2	141.4	141	124	100.3	87.9
	3	131.9	135	123	97.7	91.1
	4	126.9	126	125	100.7	99.2
1930	1	119.6	118	112	101.4	94.9
	2	112.7	119	111	94.7	93.3
	3	100.9	103	101	98.0	98.1
	4	107.1	95	101	112.7	106.3
1931	1	101.9	94	92	108.4	97.9
	2	95.0	100	94	95.0	94.0
	3	97.1	88	92	110.3	104.5
	4	102.1	77	94	132.6	122.1
1932	1	84.2	74	82	113.8	110.8
	2	76.8	69	78	111.3	113.0
	3	65.6	64	75	102.5	117.2
	4	75.1	69	80	108.8	115.9
1933	1	67.5	64	80	105.5	125.0
	2	80.6	79	89	102.0	112.6
	3	112.0	94	98	119.1	104.3
	4	87.6	83	93	105.5	112.0
1934	1	82.9	89	90	93.1	101.1
	2	83.9	97	92	86.5	94.8
	3	75.0	89	91	84.3	102.2
	4	71.8	88	93	81.6	105.7
1935	1	94.2	104	96	90.6	92.3
	2	94.3	107	97	88.1	90.7
	3	100.8	110	105	91.6	95.5
	4	103.4	118	116	87.6	98.3
1936	1	105.8	115	111	92.0	96.5
	2	104.4	127	115	82.2	90.6
	3	110.1	128	120	86.0	93.8
	4	113.4	140	127	81.0	90.7
1937	1	132.7	143	128	92.8	89.5
	2	130.7	152	138	86.0	90.8
	3	118.0	141	140	83.7	99.3
	4	106.4	123	137	86.5	111.4
1938	1	82.8	102	125	81.2	122.5
	2	73.7	101	116	73.0	114.8
	3	88.4	108	123	81.9	113.9
	4	92.5	122	131	75.8	107.4
1939	1	95.2	123	129	77.4	104.9
	2	97.0	126	131	77.0	104.0

[1] For description of series, see text, section on Statistical Material.

ment of Commerce. To obtain import quantities, current value imports have been deflated by the corresponding unit value indices, as officially published, and reduced to an index with the quarterly average for 1928–

TABLE 2. INDICES OF THE VOLUME OF U.S. IMPORTS OF CRUDE AND SEMIMANUFACTURED MATERIALS (M), DOMESTIC OUTPUT OF MANUFACTURED GOODS (P), DOMESTIC OUTPUT OF IMPORT-COMPETING CRUDE AND SEMIMANUFACTURED MATERIALS (C), AND MANUFACTURERS' STOCKS OF PURCHASED MATERIALS (S), QUARTERLY, 1947–52[1]

(1948 = 100)

		M	P	C	S	S/P	M/P	C/P
1947	1	93.8	98	91	98.8	101	96	93
	2	91.6	97	92	98.0	101	95	95
	3	85.6	95	93	96.5	102	91	98
	4	95.7	100	97	101.6	102	96	97
1948	1	107.8	100	98	98.3	98	108	98
	2	94.7	100	99	100.1	100	95	99
	3	99.3	99	100	100.4	101	100	101
	4	98.3	101	103	101.2	100	97	102
1949	1	93.0	96	96	96.4	100	97	100
	2	85.6	89	90	89.4	100	97	101
	3	84.9	89	89	87.5	98	96	100
	4	104.0	93	98	88.6	95	112	105
1950	1	116.5	95	95	86.1	91	123	100
	2	118.3	102	100	85.6	84	116	98
	3	127.6	108	107	93.5	87	118	99
	4	136.9	115	112	106.7	93	119	98
1951	1	130.9	116	112	110.6	95	113	97
	2	119.5	118	116	115.0	97	102	99
	3	108.1	115	114	114.5	100	94	99
	4	102.8	114	117.5	121.1	106	90	103
1952	1	118.0	116	115	117.5	101	102	99
	2	107.9	116	108	114.6	99	94	94

[1] For description of series, see text, section on Statistical Material.

35 as the base for the 1928–39 data, and the quarterly average for 1948 as the base for the 1947–52 data. The series is not seasonally adjusted.

Domestic production of manufactures (P)

The index of manufacturing production of the Board of Governors of the Federal Reserve System was first adjusted to exclude three component series which were thought to attract no, or very few, nonfood raw materials imports, and then calculated for the two periods on the basis of the quarterly averages for 1928–35 and 1948, respectively.

The excluded series are iron and steel, cotton consumption, and manufactured food products.

Domestic output of nonfood raw materials which compete with imports of nonfood raw materials (*C*)

This index is based on the output and prices of 12 commodities.[3] The quantity produced of each commodity was valued at the 1937 prices, or at the prices for the first production date after 1937. An index of the sum of the values at 1937 prices was then calculated, with the quarterly averages for 1928–35 and 1948 as bases for the prewar and postwar periods, respectively.[4]

Inventories (*S*) (*1947–52 only*)

Manufacturers' inventories of purchased materials, as reported by the U.S. Department of Commerce for the end of each quarter, have been adjusted for price variations. Consultation with the Office of Business Economics of the Department of Commerce showed that a reasonably reliable series of inventories in real terms can be obtained only by deflating the inventories of each industry separately and then aggregating the results. This is so because inventory valuation practice varies from industry to industry. Such a procedure would involve considerable labor, however, since the corresponding wholesale price indices for each industry, which ought to be used as deflators, would have to be reweighted in proportion to the importance of the various materials in

[3] The commodities and prices used in constructing this index are as follows:

Commodity	*Price*
Aluminum (primary production)	$0.2008 per lb.
Copper (mine production)	0.13 per lb.
Lead (receipts by smelters, domestic ore)	0.0601 per lb.
Zinc (mine production)	0.0690 per lb.
Crude petroleum (total production)	1.39 per barrel
Residual fuel oil (total production)	1.03 per barrel
Vegetable oils (total production, crude)	0.10 per lb.
Lumber (total production)	24.25 per 1,000 board feet
Woodpulp (total production, all grades)	60.00 per short ton
Rayon (domestic production, all types)	0.62 per lb.
Wool (total production, greasy basis)	0.437 per lb.
Synthetic rubber (domestic production, all types)	0.185 per lb. (for postwar years only)

Data are from International Monetary Fund, *International Financial Statistics*, publications of the American Bureau of Metal Statistics, and U.S. Bureau of the Census, *Statistical Abstract of the United States*.

[4] In order to test whether the use of 1937 prices in the construction of this index for the years 1947–52 was defensible, the same series was computed with postwar prices. No significant difference from the series with 1937 prices resulted

the inventories concerned. Moreover, such data as have been collected on purchased inventories, by industry, appear to be the results of imperfect sampling of the industries concerned and have therefore not been released.

Therefore, an approximation to a reliable inventory deflation method was adopted. It assumes that, on the average, one third of the reported (book value) inventories of purchased materials were valued at constant prices (i.e., on the last in, first out method). The remaining two thirds are assumed to have been valued at prices equal to the average wholesale prices of the five months preceding the inventory reporting date. Accordingly, one third of the reported purchased materials inventories have not been adjusted for price changes, and two thirds have been divided by the average total wholesale price index[5] for the five preceding months.

Tests for individual industries (textiles) showed that this deflation method yielded significantly different results from the use of current wholesale prices.

Results of Statistical Tests

The explanatory hypotheses described above have been tested by computing a number of regressions. Since the available statistical material is more adequate for postwar years, the results for interwar (1928–38) and postwar (1947–52) periods are discussed separately.

Period 1928–38

Imports and domestic manufacturing production. As might have been expected, the correlation between imports and domestic manufacturing production that is based on quarterly data is not so high as that based on annual data. For annual data, a regression of the form $M_t = aP_t + c$ gave a correlation coefficient in excess of .90, while the present study yields a coefficient of .81. Practically no improvement resulted from the use of a regression of the form $M_t = aP_t + bP_{t-1} + c$; the regression coefficient of P_{t-1} turned out to be clearly insignificant.

Linear trend and domestic competing output of raw materials. The correlation of the forms shown above was greatly improved by introducing a linear trend (T). The resultant regression was as follows:[6]

$$M_t^* = \underset{(.047)}{.759P_t} - \underset{(.083)}{.679T} + 34.708; \qquad R = .929 \qquad (1)$$

[5] A test showed that the use of wholesale prices of nonfarm products alone did not yield significantly different results.

[6] In this and subsequent equations, the figures given in parentheses under the regression coefficients are the standard errors of the respective coefficients.

A strong declining trend thus becomes clearly visible. The components of this regression are shown in Chart 3. The introduction of the trend results in a very acceptable fit of the regression to the original data. The residuals ($M - M^*$) show no systematic pattern, especially no noticeable difference in fit between the years previous to the Smoot-Hawley tariff and those following it. The large swing of ($M - M^*$) in 1933–34 (which also shows up prominently in Chart 1) is apparently due to the dollar devaluation in those years.

That there is no significant lag of M behind P is again shown when P_{t-1} is admitted to the regression. The resulting equation is:

$$M_t^* = \underset{(.119)}{.719P} + \underset{(.119)}{.044P_{t-1}} - \underset{(.083)}{.677T} + 34.286; \qquad R = .930 \quad (1a)$$

The coefficient of P_{t-1} is clearly insignificant.

A comparison of Charts 1 and 3 suggests that the trend (T) can, at least to some extent, be accounted for by the movement of the domestic output of import-competing raw materials (C): in the years 1928–32, the similarity of movement between C and P is less close than that between M and P, but in 1933–38, the opposite is true. The burden of adjusting raw materials input to P variations was clearly carried predominantly by M in the earlier years, and by C in the later years. Thus, C was "underadjusted" in 1928–32, and M was "overadjusted" in 1933–38. In other words, M varies throughout by at least as much as P (and by more in the later years), while C varies no more than P (and less in the earlier years).

In order to test the role of C, C has been substituted for T in the M-regression. This gives the following two equations:

$$M_t^* = \underset{(.166)}{1.087P_t} - \underset{(.213)}{.557C} + 44.086; \qquad R = .840 \quad (2)$$

$$M_t^* = \underset{(.191)}{.894P_t} + \underset{(.184)}{.339P_{t-1}} - \underset{(.223)}{.721C} + 46.138; \qquad R = .853 \quad (2a)$$

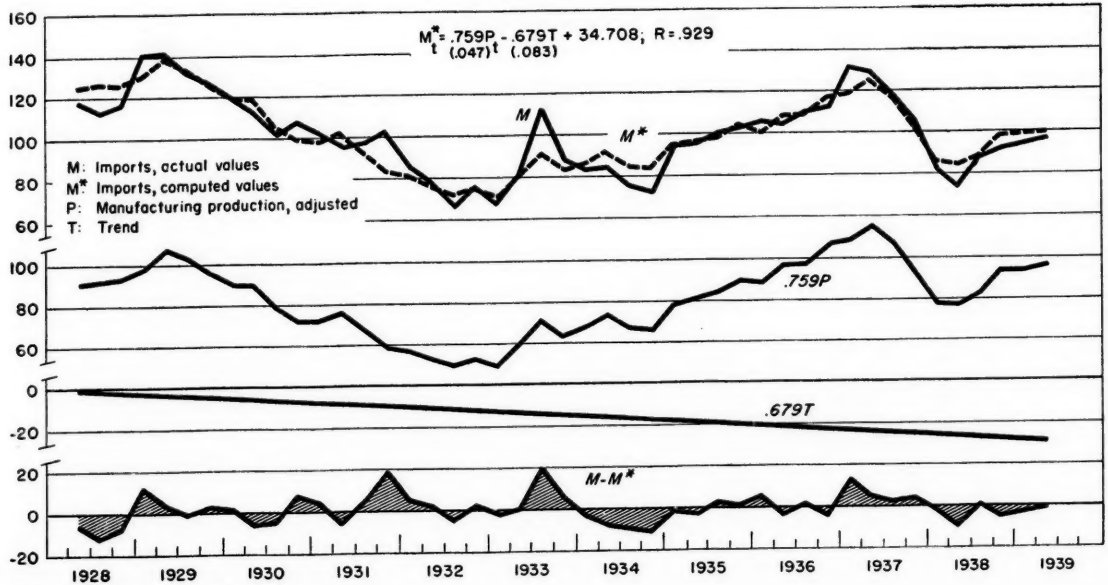
It is thus seen that the substitution of C for the trend yields considerably less satisfactory results: the movement of import-competing domestic raw materials production explains, at best, only part of the trend found earlier. The correlation coefficients of (2) and (2a) are much smaller than those of (1) and (1a); and the regression coefficients for C are less significant than those of T. T must therefore be accounted for, in part, by factors other than C, factors such as the trend in technical import-output relations referred to above.

The same conclusion may be drawn from a regression of C on P and a trend T. It yields a very high correlation coefficient:

$$C^* = \underset{(.042)}{.684P} + \underset{(.074)}{.291T} + 27.86; \qquad R = .935 \quad (3)$$

CHART 3. INDICES OF THE VOLUME OF U.S. IMPORTS OF CRUDE AND SEMIMANUFACTURED MATERIALS, QUARTERLY, 1928–39[1]

(1928–35 = 100)



[1] For description of series, see text.

The simple correlation between C and P is in fact higher than that between M and $P(r_{C.P} = .912; r_{M.P} = .813)$, while C shows a positive trend, compared with the negative one for M. This suggests that in 1928–38 M was gradually replaced by C. While the covariation of C with P was stronger than that of M, a given change in P produced a proportionally larger change in M than in C. This is shown by the fact that the (partial) elasticity of M with respect to P, as computed from the regression (1) above, is larger than the elasticity of C with respect to P. The two elasticities obtained are as follows:

$$E_{M.P} = 0.81; \qquad E_{C.P} = 0.68 \tag{4}$$

This may be taken to measure the "marginality" of raw materials imports, if the explanation just given of the relationships between M, P, and C is kept in mind. The P-elasticity of imports is less than unity (when the effect of T, and thus of C, is neglected); domestic raw materials input appears to be considerably less affected than imported input by a variation of domestic manufacturing production. When allowance is made for the effect of the falling trend on the M-P relationship, M must be expected to show, in response to a recession of P, a (downward) variation proportionally larger not only than that of C, but also than the (upward) M variation which would occur in response to an equal but upward movement of P; M suffers more from a fall in P than it benefits from a rise in P.[7] The converse is true for C, though less emphatically so, since both the P-elasticity of C and C's trend are quantitatively smaller.

Period 1947–52

For the postwar years (for which adequate inventory observations are available), there was, in fact, no noticeable trend for M; none could have been expected in view of the small number of years and the disturbing influence on imports—at least through 1948—of supply difficulties. The P-effect on M apart, inventory variations appear to have been pronounced enough to outweigh the influence on imports of C, except perhaps for the latter half of the postwar period.

General results. In accordance with the hypotheses described earlier, quarterly imports were correlated with domestic manufacturing production of the same quarter and the stock-output ratio in domestic manu-

[7] In the recession of 1937–38, this effect was strong enough to lead to a reduction, between peak and trough of the respective series, of the average import-input in P—i.e., M/P—by almost 25 per cent, in response to the reduction of P by about one third. In the recovery from 1932 to 1937, however, M/P actually fell by 10 per cent (see Table 1).

facturing of the preceding quarter. The main regression obtained is as follows:

$$M_t^* = \underset{(.149)}{.938P_t} - \underset{(.276)}{1.487(S/P)_{t-1}} + 153.873; \qquad R = .903 \qquad (5)$$

The components of this regression are shown in Chart 4. Again, though the correlation coefficient is somewhat smaller than that for the interwar years, the fit to the original data is satisfactory. There is, however, room in the $(M - M^*)$ residuals for the operation of an additional systematic influence, and it will be seen later that these residuals contain what appears to be a significant seasonal component.

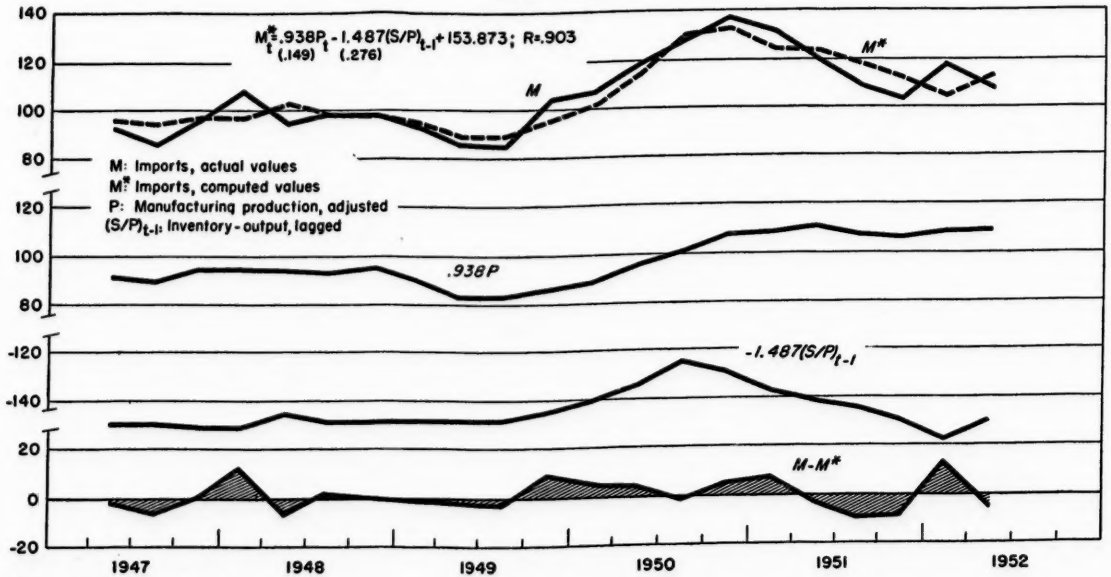
Inventories and imports. Prima facie, the form which the influence of inventory changes on imports takes is debatable. There are two major possibilities. One is that changes in inventories of raw materials are, by and large, "voluntary"; that is, the inventory level at any time is due predominantly to advance planning by manufacturing producers in anticipation of finished output changes and price movements but independent of the current level of output. Therefore, the inventory level is, at any given time, in accord with manufacturers' desires at that time, except for its imported part which lags behind its domestic part. In this case, inventory movements are also autonomous relative to domestic raw materials production, and the sequence of changes would run from inventories to production as well as to imports of raw materials. A *positive* (though lagged) correlation would be expected between inventory changes (ΔS) and import residuals which are not explained by the movements of domestic manufacturing production.[8]

Alternatively, changes in inventories of raw materials are assumed to be predominantly "involuntary"; that is, the level of inventories at any time is typically not in accord with manufacturers' desires at that time. It is reasonable to assume that manufacturers have a reasonably clearly defined notion of a "normal" level of inventories of raw materials relative to current production. When—as a result, say, of an unexpected rise in demand—the volume of finished goods production increases, raw materials for the enlarged output will, in the first instance, have to come from existing raw materials inventories. Their depletion, together with the higher product output, reduces them to a level which is deficient when compared with their desired "normal" level. Increased raw materials requirements are met from both domestic and imported sources. But imports can be adjusted only with some time lag (larger, at any rate, than whatever lag there may be in the similar adjustment of domestic raw materials output). Hence, if inventory changes are "in-

[8] This hypothesis has been elaborated in an unpublished paper by A. C. Harberger, and is further discussed below, in the Appendix.

CHART 4. INDICES OF THE VOLUME OF U.S. IMPORTS OF CRUDE AND SEMIMANUFACTURED MATERIALS, QUARTERLY, 1947–52[1]

(1948 = 100)



[1] For description of series, see text.

voluntary", a *negative* correlation would be expected between current imports and the immediately preceding ratio of inventories to the volume of raw materials absorbing production (i.e., S/P).

This "involuntary" inventory hypothesis for the relationship between raw materials imports and stocks is clearly no more than a very much abbreviated summary of a more complicated mechanism.[9] It does, however, lead to relatively simple relationships, and the statistical test, as presented by equation (5), gives a satisfactory result. The improvement of the correlation of the form (5) over a simple correlation of M on P is, as in the case of the interwar data, substantial. For the latter, the correlation coefficient was only .749, against .903 for regression (5).

The M-residuals which are still unexplained by this relation are relatively small (see Chart 4). Moreover, they appear to be largely seasonally determined.[10] The exception is 1949, explainable probably by the import-retarding effect of expectations of European devaluations. A fairly complete explanation of M thus appears to be given by three factors: current domestic manufacturing production, preceding quarter inventory-output ratio, and seasonal changes.

The effects of voluntary inventory changes (resulting from price expectations and government foreign purchasing—stockpiling) and of domestic import-competing raw materials output are scarcely, if at all, observable.

Import-competing domestic raw materials output and imports. The preceding analysis has carried the explanation of imports so far that little room is left for the operation of C. In fact, if C is included explicitly in the M-regression, the result is quite unsatisfactory:

$$M^* = \underset{(.489)}{.887P_t} - \underset{(.275)}{1.486(S/P)_{t-1}} + \underset{(.521)}{.057C} + 153.276; \quad R = .904 \qquad (5a)$$

[9] A full test of the latter is not attempted here. It would, however, be necessary to make such a test if the results presented later in this paper should prove acceptable. To test the postulated sequence between such statistical evidence of demand for finished output as manufacturers' new orders and the corresponding output should not pose any real difficulty. That producers' anticipations are typically in error, at least to the extent of throwing (imported) inventories off "normal", is not implausible, certainly not for such years as 1950–52, but clearly this hypothesis needs more detailed examination. And finally, there is reason to believe that the "norm" itself changed when the composition of output changed toward considerably larger military, compared with civilian, end-use components in 1951–52. After a change of this kind, it need not be assumed that a higher S/P ratio would discourage imports. To this extent, and perhaps also because of speculative imports in the two years, there were voluntary inventory changes which induced import movements in the *same* direction. These last two points can be dealt with, with some hope of success, only by examining the relationship between M, P, and S, either for individual raw materials or/and for individual industries—an undertaking which is beyond the limited scope of this paper.

[10] By a test of the homogeneity of the quarterly means (means of residuals for the first, second, etc., quarter) on the basis of the F distribution, the assumption of the absence of seasonality is rejected at the 5 per cent significance level.

The correlation of equation (5) is thus not improved by the inclusion of C. The regression coefficient of C is clearly insignificant and has the wrong sign for a C-M replacement hypothesis.

The main reason for this inconclusive result is the high correlation between C and P, as shown in the following equation:[11]

$$C^* = .894P - .005(S/P)_{t-1} + 10.42; \qquad R = .956 \qquad (6)$$

At the same time, this equation yields a (partial) P-elasticity of C of 0.90—a value which is only insignificantly smaller than the (partial) P-elasticity of M, as computed from equation (5), of 0.92.

These results seem to indicate two conclusions. First, *during the postwar period*, the domestic output of import-competing raw materials made no noticeable inroads on the input share of imported materials; there is no evidence for a significant substitution of this sort. Second, *compared with prewar years*, domestic output of import-competing materials was able to keep in step with manufacturing production considerably better. The significant comparison is that between the movements of C and M relative to P with those before the war, rather than that between C and M after the war. Production capacity for C appears to have been built up during the war to an extent sufficient for C to play a much stronger part relative to M than before the war.

These considerations suggest a general remark on the differences between the two elasticities in the prewar and the postwar years. The higher P-elasticity of M for 1947–52 (0.92 instead of the prewar 0.81) seems to be explained by the fact that in 1947–52 account was taken of the inventory effect, which had to be neglected for 1928–38. This appears to be additional evidence for the significance of inventory movements. The difference between the two elasticities for C (prewar, 0.68; postwar, 0.90) probably may be explained by the advances made in providing production facilities for C, as just mentioned. While, therefore, no C-M substitution effect is visible for 1947–52, it *does* appear when a comparison is made between the postwar and the prewar periods.

Apart from the probability that the C-M substitution is a long-run rather than a short-run phenomenon, its record during the postwar years is likely to have been obscured by the series of abnormal events from the immediate prewar years through the devaluations of 1949 to the outbreak of the Korean war. The shift of U.S. demand toward wool, the synthetic rubber admixture regulations, the rapid relative exhaustion

[11] Since the coefficient of $(S/P)_{t-1}$ is here obviously insignificant, this regression shows also that C—in contradistinction to M—does not lag behind the stock-output ratio, a result which gives some statistical support to what was above postulated as likely: Domestic output of import-competing raw materials is adjusted to changes in the raw materials stock ratio without the lag found for the import component of raw materials input.

of domestic oil supplies, and the over-all fact that the response of domestic substitutes to increasingly tight domestic supplies of several nonferrous metals as well as of natural fibers was still at an experimental stage, may explain the C and M record. On the other hand, there is increasing evidence that the Korean war has provided the final impetus to the adoption of a series of domestic substitutes (rubber, aluminum, textiles) whose role in C had, in 1952, just begun to make itself felt.

All this, of course, does not mean that there has been no replacement of imported by domestic raw materials in the postwar period as a whole, in comparison with 1928–38. On the contrary, a comparison of the levels of M, P, and C in two base periods—1948 for the postwar period and 1928–35 for the interwar period—shows that, while manufacturing production approximately doubled, output of import-competing domestic raw materials increased by about 170 per cent, and raw materials imports by only about 30 per cent. World War II gave a strong impetus to this substitution.

Appendix: "Voluntary" Inventory Changes and Imports

The hypothesis that voluntary inventory movements (in the sense defined above) largely explain postwar short-run (quarterly) import movements has been set forth by A. C. Harberger in an unpublished paper. Statistical evidence for 1946 and the following years was produced to support this hypothesis. Quarterly changes in real inventories were compared with quarterly deviations of real imports either from a linear trend (for total imports and imports of semimanufactures) or from the quarterly average for the period of years covered (crude materials). All series were unadjusted for seasonal variations. Wholesalers' and manufacturers' inventories of purchased materials, deflated by current wholesale prices and their raw material component, respectively, were used for the comparison with imports. Manufacturers' inventories of purchased materials, deflated in the same way, were used for the comparisons with imports of semimanufactured and crude materials. The exclusion of inventories of goods in process and of finished products is justified on the ground that the former, though voluntary, are not autonomous but depend closely on the level of output rather than on speculative anticipations, while finished product inventories are equally little sensitive to these anticipations. The emphasis is thus even more on autonomous inventory changes than on voluntary changes. Harberger admits the possible importance of involuntary inventories, but only insofar as they occur in the case of finished products (as a result of final demand fluctuations) and lead to voluntary adjustments of wholesalers' and manufacturers' inventories of raw materials.

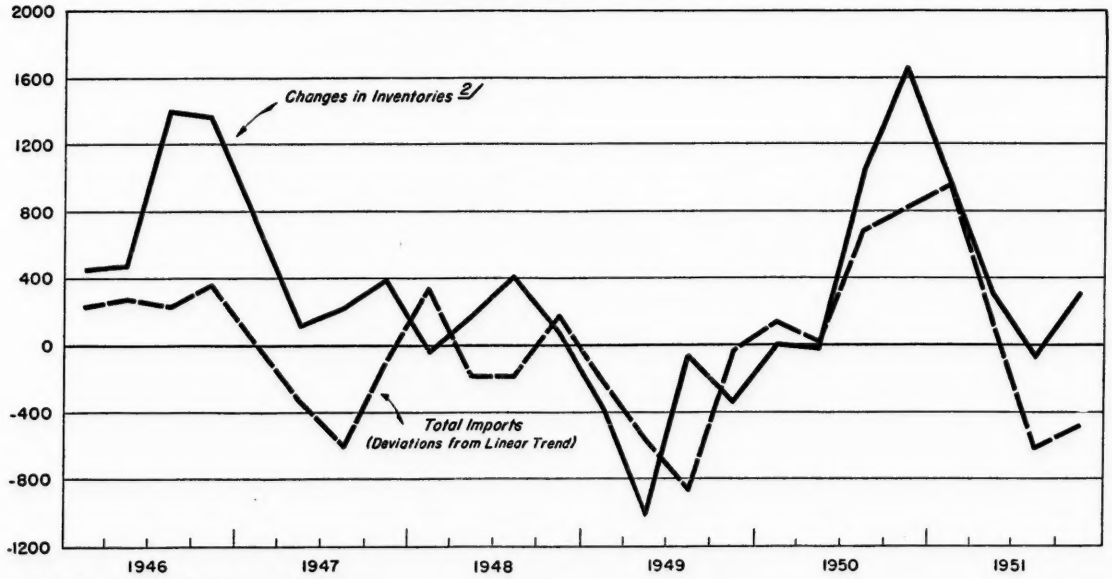
When charted, these series show an almost constant lead of inventory changes over the import deviations of one quarter (Chart 5).[12] This was regarded as significant evidence in support of the hypothesis that voluntary inventory movements were an important part of the explanation of postwar short-run import movements.

Technically, a first objection to this procedure may be that the elimination from imports of a trend (or average) is meaningless unless the purpose is to eliminate the influence of such basic factors as domestic manufacturing produc-

[12] The series originally prepared by Harberger have been recomputed here to take account of the U.S. Department of Commerce revised inventory and wholesale price series.

CHART 5. U.S. INVENTORY AND IMPORT CYCLES[1]

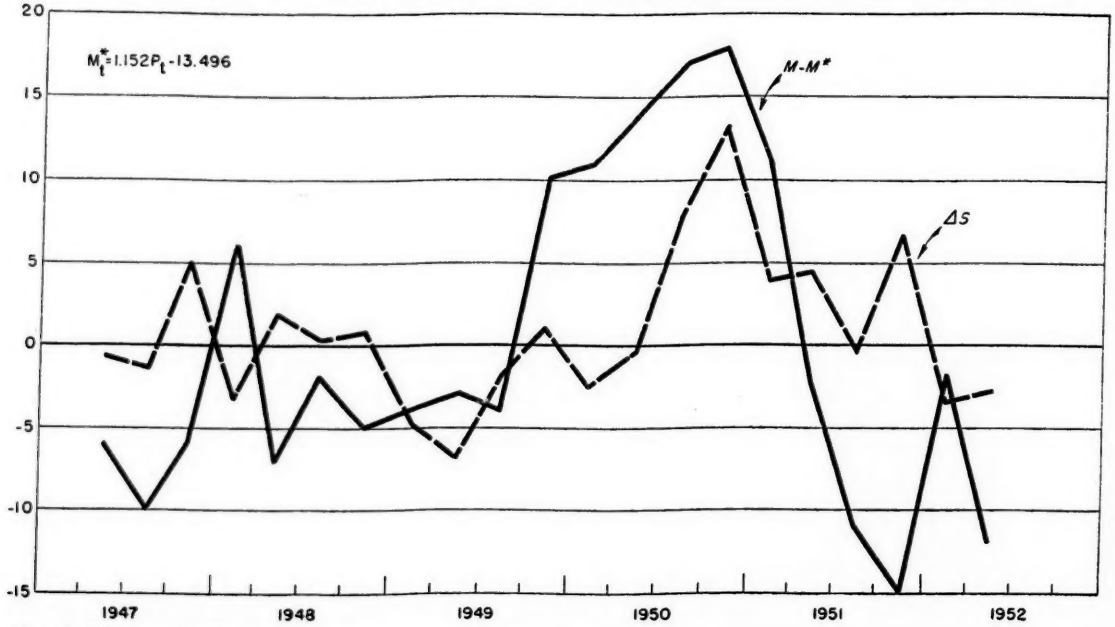
(In millions of 1926 U.S. dollars)



[1] For description of series, see text.

[2] Wholesalers' inventories plus inventories of materials held by manufacturers.

CHART 6. U.S. INVENTORY CHANGES (ΔS) AND DEVIATIONS OF IMPORTS FROM IMPORT REGRESSION ON OUTPUT (M− M*)[1]



[1] For description of series, see text.

tion.[13] If, in order to allow more adequately for the influence of P on M, the procedure is repeated, this time plotting the quarterly changes of stocks (ΔS) against the deviations of imports ($M - M^*$) from an import-output regression ($M\dagger = 1.152P_t - 13.496$), the lead-lag pattern is seen to hold for 1947–48, and for the three quarters beginning with the third quarter of 1951. For the intervening period, when the influence of inventories might have been expected to have been especially strong, the pattern is not visible (Chart 6). At best, therefore, the statistical evidence merely supports the view that the movement of imports in the two subperiods requires different explanations, a "voluntary" inventory movement pattern in the one, and an "involuntary" pattern in the other. From the movement of the ($M - M^*$) residual in Chart 4, however, it may be seen that the ("involuntary") pattern suggested in the text fits the whole 1947–52 period uniformly well, and, therefore, on purely statistical grounds this hypothesis seems preferable.

Harberger's hypothesis rests on the assumption that the change of raw materials inventories, at a given time, is in accord with entrepreneurs' plans at that time—except for the imported part of the inventories. Since the time needed to make a change in import plans effective (i.e., the lag between import orders and import receipts) must be known to entrepreneurs, there is really no reason why the imported part of inventory changes should form an exception to his "voluntary" pattern. On his assumption, therefore, the lag which has been observed for at least part of the 1947–52 period would not be expected. It would seem, therefore, that the alternative "involuntary" pattern here suggested also has the advantage of consistency.

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[13] Except for the period from the first quarter of 1950 through the second quarter of 1951, Harberger's results still hold when the first differences of inventories, deflated as in the text above, are plotted against the deviations of real imports of semimanufactured and crude materials from a linear trend. During the first six quarters of the Korean war, the statistical support, at least for his explanation, fails. Harberger was aware of this objection, and adopted the relatively simple procedure of eliminating a linear trend from the import side—to allow for the growing supply in the rest of the world of exportable materials—as a computational short cut rather than on analytical grounds.

The Fund Agreement in the Courts—III

Joseph Gold*

THREE CASES of importance are discussed in this installment of the survey of cases involving the Articles of Agreement of the International Monetary Fund.[1] These have been decided by the International Court of Justice, the New York Court of Appeals, and the U.S. Federal Communications Commission. The issues relate to the right of a country to impose exchange control, the recognition by members of the Fund of the exchange control regulations of other members, and the privileges and immunities of the Fund.

Exchange Control

The validity under public international law of exchange control in the French zone of Morocco was one of the issues raised by the parties in the *Case Concerning Rights of Nationals of the United States of America in Morocco* (*France v. United States of America*), which was decided by the International Court of Justice on August 27, 1952.[2] The arguments of both France and the United States on this aspect of the case constitute the most exhaustive discussion so far of the effect on exchange control of the Articles of Agreement of the International Monetary Fund.

France had submitted the case to the International Court of Justice as the result of a protracted dispute with the United States in which the latter had contended that, under a complex series of treaties affecting Morocco entered into over a period of many years, it was entitled to certain economic and extraterritorial rights which France had not observed. The disagreement between the two Governments had arisen soon after the establishment of the French Protectorate over Morocco under the Treaty of Fez of March 20, 1912,[3] but had become more acute

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[1] Earlier installments appeared in *Staff Papers*, Vol. I, pp. 315–33 (April 1951), and Vol. II, pp. 482–98 (November 1952).

[2] *I.C.J. Reports*, 1952, pp. 176–233. For a thorough analysis of the case, see A. de Laubadère, "Le Statut International du Maroc et l'Arret de la Cour Internationale de Justice du 27 août, 1952", *Revue Juridique et Politique de l'Union Française*, Vol. 6 (1952), pp. 429–73, in which the question of exchange control is discussed at pp. 453–69.

[3] However, it was not disputed between the parties that, even after the establishment of the Protectorate, Morocco retained its personality as a State in international law. See *I.C.J. Reports*, 1952, p. 185.

after the end of World War II. The last stage of the dispute, as far as it concerned one of the economic rights, was the result of a Decree of December 30, 1948 issued by the Resident General of the French Republic in Morocco (hereinafter referred to as the Decree).

The effect of the Decree was to restore certain regulations under which imports not requiring an official allocation of exchange (imports *sans devises*) were subjected to a system of licensing. It was declared that under these regulations licenses would be granted for only a limited list of goods. The Decree applied to all importers in Morocco, including U.S. nationals; and it applied to imports from all sources, save only that imports from France and other parts of the French Union might enter freely. The justification by France for the imposition of these regulations was that the regime of free importation that had preceded them had resulted in extensive illegal transfers of funds and an adverse effect on the franc.[4] The United States contended that the restrictions on imports by its nationals in Morocco and the discrimination in favor of France were contrary to treaty rights. It based its case on various treaties, including the General Act of Algeciras of April 7, 1906, a multilateral treaty defining the status of Morocco which recognized the principle of "economic liberty without any inequality". The United States also relied on treaties between Morocco and a number of countries which guaranteed the right to import into Morocco, and on a most-favored-nation clause in a treaty of its own with Morocco, dated September 16, 1836. To settle the controversy, France asked the Court to declare that U.S. nationals in Morocco were subject to the Decree without the prior consent of the United States, and that the Decree was in conformity with the economic system that applied to Morocco under the conventions binding on the United States and France. For its part, the United States requested the Court to find that the application of the Decree to U.S. nationals without the consent of the United States violated its treaty rights and was a breach of international law.

(1) *The French Memorial*

The arguments of both parties included detailed discussions of the validity of exchange control, but these arguments will be summarized here only insofar as they relied upon or were related to the Fund's Articles of Agreement. The arguments will be set forth approximately in the order in which they were presented to the Court, so as to give some impression of the development of what was in effect a broad colloquy between the parties on the Fund Agreement.

[4] An analysis of imports *sans devises* is to be found in the French Memorial, *I.C.J. Pleadings*, Vol. I, pp. 15–17. For the argument of the United States that the variations in the strength of the franc on the parallel market were not attributable to the volume of these imports, see *I.C.J. Pleadings*, Vol. II, pp. 239–41.

The essence of this part of the French case was as follows:

> . . . the Government of the United States claims to find in the General Act of the International Conference of Algeciras of April 7th, 1906, proof that France, in her conduct of affairs in Morocco, had departed from the principle of economic liberty without any inequality, which is laid down in the Preamble of that diplomatic instrument. According to the Government of the French Republic, the actual meaning of the principle of economic liberty without any inequality must be determined in the light of the information revealed by international practice, as it is shaped by economic development and as it results from the interpretation of other treaties containing the same principle. The great international instruments by which the States, after the last conflict, tried to restore the freedom of exchanges and to eliminate discrimination (in particular, the Agreements of Bretton Woods of July 22nd, 1944, the Agreements on customs tariffs and trade of October 30th, 1947, and the Charter of Havana of 24th March 1948) authorize a State to take such measures as are necessary to avoid a crisis which would gravely threaten the foundations of its economic equilibrium and its monetary stability.[5]

This contention was elaborated by France in four propositions set forth in the Memorial submitted by it to the Court.[6]

(i) *A system of equality of treatment does not preclude the institution of exchange control.* Monetary or economic disorders may rapidly and fundamentally shake the stability and order of a State. Therefore, a State is and must be free to regulate its monetary system and foreign trade in order to defend itself against such a threat. When the exchange resources of a State are inadequate, it is a vital necessity for it to introduce exchange control. Any limitation on this freedom of action that a State may have accepted must be construed restrictively. Various postwar international conventions have recognized the unavoidable necessity for States to organize their scarce means of payment as a stage in the progress toward freedom of trade and convertibility of currencies. The Bretton Woods Agreement is the basic international instrument which defines the obligations of member States in monetary matters. It establishes a principle of liberty without inequality because one of its general purposes is to facilitate the expansion and balanced growth of international trade and because it prohibits exchange restrictions and discriminations. Nevertheless, various provisions in the Agreement recognize the need for exchange control and authorize its imposition. Article XIV, Section 2[7] provides generally for exchange control during the whole of the postwar transitional period. Other provisions deal with

[5] From the Application by France instituting proceedings; see *I.C.J. Pleadings*, Vol. I, p. 11.

[6] *I.C.J. Pleadings*, Vol. I, pp. 78–89; Vol. II, pp. 196, 199–207.

[7] Article XIV:

Section 2. *Exchange restrictions.*—In the post-war transitional period members may, notwithstanding the provisions of any other articles of this Agreement, maintain and adapt to changing circumstances (and, in the case of members whose territories have been occupied by the enemy, introduce where necessary) restrictions on payments and transfers for current international transactions. Members shall, however, have continuous regard in their foreign exchange policies

special cases, such as Article VII, Section 3(a) and (b),[8] which applies where the Fund declares that a currency is scarce. Moreover, there are circumstances in which the imposition of exchange control is compulsory, as in the case of an excessive outflow of capital (Article VI, Section 1(a))[9].

The right of a State to impose exchange control, as recognized by the Fund Agreement and other international agreements, is not denied to Morocco because it has undertaken a commitment of equal treatment in its commercial relations with other countries. The principle of equal treatment as provided for in the Act of Algeciras in vague and general terms was intended only to prevent the creation of special privileges. The Fund Agreement does not and was not meant to create such privileges. It establishes principles and institutions for all members. Thus, there is no conflict between the Act of Algeciras and the Fund Agreement.

(ii) *The right of Morocco to impose exchange control has been recognized.* It has been recognized because the Fund Agreement is binding on Morocco under Article XX, Section 2(g).[10] It cannot be argued that

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to the purposes of the Fund; and, as soon as conditions permit, they shall take all possible measures to develop such commercial and financial arrangements with other members as will facilitate international payments and the maintenance of exchange stability. In particular, members shall withdraw restrictions maintained or imposed under this Section as soon as they are satisfied that they will be able, in the absence of such restrictions, to settle their balance of payments in a manner which will not unduly encumber their access to the resources of the Fund.

[8] Article VII:

Section 3. *Scarcity of the Fund's holdings.*—(*a*) If it becomes evident to the Fund that the demand for a member's currency seriously threatens the Fund's ability to supply that currency, the Fund, whether or not it has issued a report under Section 1 of this Article, shall formally declare such currency scarce and shall thenceforth apportion its existing and accruing supply of the scarce currency with due regard to the relative needs of members, the general international economic situation, and any other pertinent considerations. The Fund shall also issue a report concerning its action.

(*b*) A formal declaration under (*a*) above shall operate as an authorization to any member, after consultation with the Fund, temporarily to impose limitations on the freedom of exchange operations in the scarce currency. Subject to the provisions of Article IV, Sections 3 and 4, the member shall have complete jurisdiction in determining the nature of such limitations, but they shall be no more restrictive than is necessary to limit the demand for the scarce currency to the supply held by, or accruing to, the member in question; and they shall be relaxed and removed as rapidly as conditions permit.

[9] Article VI:

Section 1. *Use of the Fund's resources for capital transfers.*—(*a*) A member may not make net use of the Fund's resources to meet a large or sustained outflow of capital, and the Fund may request a member to exercise controls to prevent such use of the resources of the Fund. If, after receiving such a request, a member fails to exercise appropriate controls, the Fund may declare the member ineligible to use the resources of the Fund.

[10] Article XX:

Section 2. *Signature.*—(*g*) By their signature of this Agreement, all governments accept it both on their own behalf and in respect of all their colonies, overseas territories, all territories under their protection, suzerainty, or authority and all territories in respect of which they exercise a mandate.

the drafters intended to exclude from that provision protectorates or colonies subject to a system of equal treatment, because the drafters expressly included mandated territories, and these are always subject to such a system. The notification by France under Article XIV, Section 3[11] informing the Fund that France intended to take advantage of Article XIV, Section 2 during the transitional period applied to all French protectorates, including Morocco. The Fund received the notification without reservation, and therefore impliedly accepted the institution of exchange control in Morocco. Furthermore, the United States itself had accepted the need for exchange control in Morocco in various policies, agreements, and communications.

(iii) *Exchange control can legitimately extend to the prohibition of imports sans devises.* The Fund Agreement and other international agreements specify the circumstances in which exchange control is justified, and the aims to be achieved by it, but, generally speaking, do not limit or otherwise prescribe the manner in which it may be exercised. Provided that a State does not go beyond the general principles of any relevant treaty, it may determine for itself how it will adapt its exchange control regulations to changing requirements. The prohibition or limitation of imports *sans devises* is a normal feature of exchange control and circumstances may make it necessary.[12] It had been found necessary in Morocco in order to prevent such violations of exchange control as illegal transfers for the purpose of acquiring exchange on the Paris parallel market with which to pay for imports into Morocco.

(iv) *The prohibition of imports sans devises, except from France and the French Union, is not a discrimination against the United States which is contrary to public international law.* To hold otherwise would be to condemn exchange control as a whole, because it never applies uniformly but is always exercised in relation to the availability of each currency. France intends to reduce exchange control as much as possible, but the dollar is scarce in Morocco whereas the means of making payments to France are not. Inasmuch as adoption of the Decree was dictated by financial necessities, and not by discriminatory or protectionist policies, it did not constitute an unjust discrimination against the United States.

[11] Article XIV:

Section 3. *Notification to the Fund.*—Each member shall notify the Fund before it becomes eligible under Article XX, Section 4(*c*) or (*d*), to buy currency from the Fund, whether it intends to avail itself of the transitional arrangements in Section 2 of this Article, or whether it is prepared to accept the obligations of Article VIII, Sections 2, 3, and 4. A member availing itself of the transitional arrangements shall notify the Fund as soon thereafter as it is prepared to accept the above-mentioned obligations.

[12] Reference was made to the prohibition of such imports by Italy in 1948; and to the abandonment by Greece, at a later date, of a proposal to permit them. It was pointed out that in this latter case Greece acted with the advice of experts, one of whom was from the Fund.

(2) *The U.S. Counter-Memorial*

In its Counter-Memorial the United States reviewed the treaties and diplomatic negotiations affecting Morocco and concluded that the United States is guaranteed a regime of free trade without restrictions on imports. The Decree is a violation of this guarantee unless two conditions are met. First, it must be shown that the Fund Agreement and other later treaties cited by France supersede or abrogate the earlier treaties. Secondly, in view of the rule of international law that treaties affect only the parties to them, it must be shown that the later treaties are binding on both the United States and Morocco.

The United States and Morocco are both bound by the Fund Agreement. France entered into the Fund Agreement in respect of Morocco under Article XX, Section 2(g). There are no express terms in the Agreement that modify previous treaty provisions forbidding prohibitions on imports. Abrogation by implication cannot be lightly assumed. To sustain the argument of implied abrogation, it is necessary to show that the Fund Agreement confers on Morocco a legal right or obligation to impose exchange control and that exchange control necessarily leads to the control of all imports, including imports *sans devises*.

One of the fundamental purposes of the Fund is "To assist . . . in the elimination of foreign exchange restrictions which hamper the growth of world trade" (Article I(iv)). By joining the Fund, therefore, countries commit themselves in principle to the elimination of exchange control. This purpose is furthered by the general obligation of Article VIII, Section 2(a), under which "Subject to the provisions of Article VII, Section 3(b), and Article XIV, Section 2, no member shall, without the approval of the Fund, impose restrictions on the making of payments and transfers for current international transactions." Thus, Article VIII, Section 2(a), as well as Article I, sets its face against exchange control, subject however to two exceptions. One of these is Article XIV, Section 2, which France describes as a provision authorizing exchange control. However, this provision neither empowers nor compels Morocco to have exchange control. It merely recognizes the fact that exchange control is in existence, and gives the option to a country to maintain it for a transitional period instead of abolishing it at once under Article VIII. In other words, Article XIV, Section 2 creates no rights or obligations except the negative right of option not to become bound at once by the provisions prohibiting exchange control. This interpretation is supported by Article XIV, Section 3.

The view that Article XIV, Section 2 is a positive provision authorizing exchange control would mean that the legal authority to have exchange control originates in and depends upon that provision. But the parties

obviously had this authority before the Agreement took effect, and this explains why it was necessary to draft an agreement to eliminate exchange restrictions. Thus, until, as provided in Article XIV, Section 3, a country accepts the obligations of Article VIII, it is simply exercising the legal authority to control its exchange which it enjoyed before the Fund Agreement took effect. The one case in which it may be conjectured that Article XIV, Section 2 would be the direct source of authority would be the hypothetical one in which a country first unqualifiedly accepts the obligations of Article VIII and subsequently is permitted by the Fund to have exchange control under Article XIV.

The second reservation to the prohibition of exchange control in Article VIII, Section 2(a) is the case covered by Article VII, Section 3(b). France cites this provision as one which authorizes control when the Fund considers that a certain currency is scarce. This formulation suggests that a country is authorized by Article VII, Section 3(b) to impose exchange control when it suffers from a shortage of a particular currency, but this is not the true meaning of the provision. Article VII, Section 3(b) permits exchange restrictions, not because a member country lacks a particular currency, but because the Fund has declared under Article VII, Section 3(a) that its own holdings of a currency are scarce. The Fund has never made any such declaration, so that Article VII, Section 3(b) cannot be construed as conferring authority on Morocco to control its exchange.

There is a similar ambiguity in the reference by France to Article VI, Section 1(a) as an example of a provision which makes it compulsory for a country to have exchange control. This provision does not mean that a country must have exchange control whenever capital outflows threaten its financial position. As in the case of Article VII, Section 3(b), it is the financial position of the Fund, and not of member countries, that is at issue. Article VI, Section 1(a) seeks to protect the resources of the Fund from drawings by members to meet a large or sustained outflow of capital. The Fund has never invoked this provision either, and again, therefore, it cannot be regarded as conferring authority on Morocco to impose exchange control.

The United States concluded that there is nothing in the Fund Agreement or any of the other international agreements relied upon by France to support the proposition that they are the source of any right or duty on the part of Morocco to impose exchange control. Therefore, the argument of implied abrogation or supersession of earlier treaty rights cannot succeed. Those treaty rights entitle U.S. nationals to import into Morocco without prohibitions, and as the Decree prohibits imports it is a violation of the treaty rights. There would be no violation only

if, on the request of Morocco, the United States agreed to waive its rights.[13]

(3) *The French Reply*

In its Reply, France elaborated the argument that neither the Act of Algeciras nor the earlier treaties entered into by Morocco prevent such exchange control or import prohibitions as are necessary to maintain *l'ordre public* in Morocco and to transform it into a modern state. Exchange control adopted to cope with a serious shortage of foreign exchange is necessary for these purposes.

The argument based on the Fund Agreement is not that it abrogates earlier treaties or makes exchange control legal where it is otherwise illegal, or that exchange control was not legal in Morocco before the Fund Agreement took effect. The argument is that even a treaty which establishes a new general rule prohibiting exchange control nevertheless *recognizes* that there are circumstances, both before and after the termination of the transitional arrangements of Article XIV, Section 2, in which it is legitimate for any member or any territory under Article XX, Section 2(g) to have exchange control. For this reason France would reply to the views expressed by the United States on certain provisions of the Agreement even though Article XIV, Section 2 is in itself a sufficient recognition of the right of Morocco to have exchange control at this time.

The United States construes Article VII, Section 3(b) to refer to a scarcity of the Fund's holdings of a currency and to apply only where the Fund makes a formal declaration of scarcity. But the scarcity of the Fund's holdings of a currency must be preceded by a scarcity among members. The Fund has acknowledged a scarcity of U.S. dollars among members participating in the European Recovery Program and, although it has not formally declared the dollar scarce, it has adopted a more stringent measure in its decision of April 5, 1948 which announced that such members should request the purchase of dollars from the Fund only in exceptional or unforeseen cases.[14]

It is true that the Fund has not resorted to Article VI, Section 1(a), but this does not mean that the provision cannot apply to Morocco. It has not been applied only because Morocco has exchange control under Article XIV, Section 2; it would have been applied but for this fact.

The argument of the United States that Article XIV, Section 2 cannot be construed as a source of authority to have exchange control except

[13] *I.C.J. Pleadings*, Vol. I, pp. 335–43.
[14] International Monetary Fund, *Annual Report, 1948*, Appendix IV, pp. 74–75.

where a country accepted the obligations of Article VIII and then requested the Fund to permit it to revert to Article XIV leads to a curious result. All that would be necessary to authorize Morocco to institute exchange control under Article XIV, Section 2 would be a purely symbolic interruption in the exchange control it has been maintaining.[15]

(4) *The U.S. Rejoinder*

The United States attacked the French concept of *l'ordre public* on various grounds, one of which was that it would enable a State unilaterally to modify or suspend its treaty obligations. The Fund Agreement does not support the view that a country can arbitrarily and unilaterally impose import prohibitions on the basis of financial considerations in disregard of anterior engagements. Article VIII, Section 6[16] deals with a possible conflict between exchange restrictions contemplated by the Fund Agreement and earlier treaty obligations, and in such a case requires prior consultation between the parties. France cannot rely on all of the benefits of the Fund Agreement and ignore the one obligation, that of Article VIII, Section 6, to which those benefits are subject. In the circumstances, therefore, all of the arguments of France based on the Fund Agreement become irrelevant.[17]

(5) *French Oral Argument*

To the argument of the Rejoinder based on Article VIII, Section 6, France replied, first, that that provision is subject to an express exception, Article VII, Section 5,[18] which deals with scarce currencies, and the present case is governed by that exception. Article VII, Section 5 covers two cases of scarcity, the general scarcity of a currency under Section 1 and a scarcity of the Fund's holdings of a currency under Section 3. An official declaration by the Fund is necessary only under Section 3.

[15] *I.C.J. Pleadings*, Vol. II, pp. 26–31.

[16] Article VIII:

Section 6. *Consultation between members regarding existing international agreements.*—Where under this Agreement a member is authorized in the special or temporary circumstances specified in the Agreement to maintain or establish restrictions on exchange transactions, and there are other engagements between members entered into prior to this Agreement which conflict with the application of such restrictions, the parties to such engagements will consult with one another with a view to making such mutually acceptable adjustments as may be necessary. The provisions of this Article shall be without prejudice to the operation of Article VII, Section 5.

[17] *I.C.J. Pleadings*, Vol. II, p. 105.

[18] Article VII:

Section 5. *Effect of other international agreements on restrictions.*—Members agree not to invoke the obligations of any engagements entered into with other members prior to this Agreement in such a manner as will prevent the operation of the provisions of this Article.

However, the Fund's decision on the use of its resources by members benefiting under the European Recovery Program was an even more vigorous declaration than that envisaged by Section 3. Secondly, if Article VIII, Section 6 does apply, then France has performed its duty of consultation. That provision does not require prior consultation, and consultations have taken place between the Moroccan and U.S. authorities from 1948 to 1950. Until parties succeed in good faith in reaching a mutually acceptable adjustment under the provision, a country is authorized to maintain exchange control under the other provisions of the Agreement.[19]

The payments regime in Morocco has been notified to the Fund and the Fund has not objected to it. The Fund, and not the Court, is the competent international authority to decide whether exchange control is valid under its Articles. It is for the United States, which is really in the position of the plaintiff, and not for the Moroccan authorities, to request an interpretation from the Fund under Article XVIII.[20]

(6) *U.S. Oral Argument*

The arguments of France based upon the Fund Agreement ignore the fact that that Agreement deals with exchange control and not import control. The present case involves import control. Moreover, it was imposed, not in order to enforce exchange control, but for protectionist purposes.[21]

In any event, the French version of Article VIII, Section 6 cannot be accepted. The Fund Agreement does not deprive a member of its rights under prior treaties. Such a member is bound to consult with another member which wishes those rights to be waived or modified. The United States is thus bound to consult with France on the modification of pre-existing treaty rights of the United States. But this does not mean that, if consultation has taken place and no "mutually acceptable adjustment" has been reached, there is then a unilateral right to treat the pre-

[19] *I.C.J. Pleadings*, Vol. II, pp. 201–2, 309.

[20] *I.C.J. Pleadings*, Vol. II, pp. 200, 205, 308–9. For the text of Article XVIII, see n. 44, *infra*.

[21] *I.C.J. Pleadings*, Vol. II, p. 257. The French reply to this argument was that exchange control and import control are not identical, but they are not necessarily independent. Exchange control may apply where no import is involved, as in the case of capital transfers. Similarly, import control may involve no financial considerations, as in the case of controls for reasons of public health, trading with the enemy, or protection of a new industry. But exchange control may apply to current transactions, and then it necessarily involves import control. This is shown by Article VIII, Section 5 (a)(v), (vi), (xi); and Article XIX (i)(1) of the Fund Agreement. The Decree of December 30, 1948 is based on financial considerations. A prohibition of imports *sans devises* could not be characterized otherwise. It is, therefore, a measure of exchange control. *I.C.J. Pleadings*, Vol. II, pp. 304–5.

existing engagements as rescinded. Those engagements can be affected only when the parties reach an agreement, and no agreement has been reached in the present case.

This view of Article VIII, Section 6 is supported by its last sentence, which states the sole exception to the general rule that derogations from prior treaties are not authorized. This exception relates to action required by Article VII. However, France cannot rely on that provision because the Fund has never made a "formal declaration" of scarcity. The Fund's E.R.P. decision of April 5, 1948 was not drafted as, and was not intended to be, a "formal declaration" under Article VII. Nor was it a more stringent measure than a "formal declaration". Such a declaration would affect all members of the Fund, whereas the E.R.P. decision affected only those members participating in E.R.P. Finally, in March 1952 the Fund recognized that the E.R.P. decision was no longer in effect.

The discussion as to the meaning of the E.R.P. decision shows the wisdom of the requirement in the Fund Agreement which imposes on France, as the party attempting to justify action based on the Agreement, the burden of requesting an authoritative interpretation from the Fund under Article XVIII. That provision states that: "Any question of interpretation of the provisions of this Agreement arising . . . between any members of the Fund shall be submitted to the Executive Directors for their decision." France has not complied with this mandatory provision, and therefore its assertion that the treaty rights of the United States have been abrogated should be rejected.[22]

(7) *The Decision of the Court*

The International Court decided unanimously that it must reject the submissions of France with respect to the Decree. The Act of Algeciras provided that Morocco should have a regime of "economic liberty without any inequality". The meaning of this concept was to be found in the context of treaty provisions relating to trade and equality of treatment in economic matters existing at the time of the Act of Algeciras. A series of diplomatic pronouncements, both before and after the Act of Algeciras, showed that it was understood by all, including France, that the concept was not an empty one, and that it meant that there must be no differential treatment in economic matters among the nationals of the various States concerned. Thus, the United States was

[22] *I.C.J. Pleadings*, Vol. II, pp. 257–61, 319–21. On the Fund's E.R.P. decision, France replied that the decision was revoked because of the termination of the first U. S. aid program. This does not mean that the decision was ineffective for the period 1948–52, or that thereafter the dollar ceased in fact to be a scarce currency. *Ibid.*, pp. 308–9.

assured by both Morocco and France, as the protecting State, of equality of treatment.

Was France, as the protector, entitled to privileges in Morocco that need not be accorded to the United States? The rights of France in Morocco were defined by the Treaty of Fez, which gave France no privileged position in economic matters. Any such privileged position would be incompatible with the principle of economic liberty without inequality upon which the Act of Algeciras was based.

It followed that the Decree contravened the rights of the United States under the Act of Algeciras because it discriminated between imports from France and other parts of the French Union, on the one hand, and imports from the United States, on the other. This conclusion could also be based on the Treaty of September 16, 1836 between the United States and Morocco, which contained a most-favored-nation clause.

The Court held that the conclusions it had reached made it unnecessary to pronounce upon the various contentions advanced by France to demonstrate the legality of exchange control. Even if the legality of exchange control in Morocco were assumed, it could not justify the discrimination in favor of France created by the Decree. It also became unnecessary to consider the other arguments invoked by the United States against the Decree. In these circumstances, the Court did not feel called upon to consider and decide the general question of the extent of the control over imports that might be exercised by the Moroccan authorities.[23]

Thus, although the pleadings in the case raised numerous and often fundamental questions as to the effect of the Fund Agreement on the public international law relating to exchange control, the International Court preferred not to pass upon these questions. For example, it did not discuss the general question whether the Fund Agreement entitles or compels a member country to have exchange control notwithstanding prior treaty commitments to the contrary. Nor did it hold in the particular case before it that Morocco was entitled to impose exchange control. All it purported to decide was that, under treaty arrangements entered into in the past, Morocco was prevented from adopting controls on imports that discriminated against the United States. The United States would be entitled to object even if Morocco had the general right to adopt exchange control but sought to exercise that right in a way that discriminated against the United States.[24]

[23] *I.C.J. Reports*, 1952, pp. 183–86.

[24] As a result of the decision, France could have extended the control of imports *sans devises* to imports from the franc area or could have removed this control altogether. It chose the latter course, making it clear at the same time that the existing control over the allocation of foreign exchange would be continued. In addition, importers who were free to import because they had not

The nature of the decision emerges more clearly when it is examined in relation to the basic arguments advanced by the parties. In this connection it is interesting to note that the United States interpreted the French case to be that the earlier treaties had been superseded or abrogated, so far as they dealt with the principle of economic liberty without inequality, by such later treaties as the Fund Agreement. It is doubtful, however, whether this was in fact the precise character of the main argument on which France relied. It seems really to have been that the principle of economic liberty without inequality was a flexible one, the content of which could vary from time to time. The determination of its content at any particular date should be made on the basis of contemporary economic developments and international practice. Thus, the argument was not that the treaty provisions establishing the principle of economic equality had been abrogated or superseded, but that they should be interpreted by means of a particular technique.[25] If this technique were followed, the fact that exchange control had not been thought of at the time of the Act of Algeciras in 1906 would not mean that the principle could not be interpreted so as to permit exchange control in 1948.

If the judgment is examined from the standpoint of the French argument as formulated above, it is clear that the Court did not agree that the principle of economic equality was a flexible one capable of growth or change. Its meaning was to be sought in diplomatic discussions relating to the treaties in which it had been incorporated, and the meaning when found in this way was fixed. The Court decided that the parties had understood the principle to preclude discrimination, and therefore it could not be interpreted so as to embrace discrimination at a later date.

If the United States' version of the French argument is adopted, the judgment of the Court must mean that earlier treaties, insofar as they established a principle prohibiting discriminatory exchange control, have not been abrogated or superseded by such later treaties as the Fund Agreement, under which discriminatory exchange control might otherwise be possible. Clearly, if there had been such abrogation or supersession, the Court could not have rejected the French submission.

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received an official allocation of exchange would be required, when requested by the competent authorities, to describe the use of funds from the sale or utilization of these imports. See *U.S. Department of State Bulletin*, Vol. XXVII, No. 695, p. 623, October 20, 1952, and A. de Laubadère, *op. cit.*, pp. 463–65.

[25] That this was the basic French argument appears more clearly in the Application instituting proceedings, from which a passage has been quoted on page 292 of this article. In oral argument, however, France argued that, if the Court did not accept the Fund Agreement as helping to determine the content of the concept of economic liberty without any inequality under the Act of Algeciras, it should regard the Fund Agreement as establishing an exception to that Act. *I.C.J. Pleadings*, Vol. II, pp. 199, 303.

Unenforceability of Certain Exchange Contracts

In the second installment of the survey of cases involving the Articles of Agreement of the International Monetary Fund,[26] an account was given of the decision of the Appellate Division of New York in *Perutz v. Bohemian Discount Bank in Liquidation*.[27] A further appeal was instituted, and the Court of Appeals, the highest State court in New York, has now delivered its opinion and reversed the judgment of the Appellate Division.[28] Although the precise scope of the opinion is not clear, it will undoubtedly be regarded as a significant development in the law relating to the international recognition of exchange control regulations. The decision is of particular interest because it rests squarely upon the legal effect of membership in the International Monetary Fund.

Examination of the case must be prefaced by a summary of the Fund's formal interpretation under Article XVIII,[29] adopted in June 1949, of the first sentence of Article VIII, Section 2(b) which provides that:

> Exchange contracts which involve the currency of any member and which are contrary to the exchange control regulations of that member maintained or imposed consistently with this Agreement shall be unenforceable in the territories of any member. . . .

The Fund's interpretation[30] involved three major principles. First, the judicial or administrative authorities in a member country must not give assistance to one who seeks the performance of an exchange contract falling within the provision which is contrary to the exchange control regulations of another member maintained or imposed consistently with the Fund Agreement. Secondly, these authorities may not ignore the exchange control regulations of another member in such a case on the ground that, under the private international law of the forum, the regulations are not part of the law which governs the contract or its performance. Thirdly, they may not ignore the exchange control regulations in such a case on the ground that the regulations are against the public policy (*ordre public*) of the forum.

In the *Perutz* case the facts were these. The plaintiff was the administratrix of the estate of her deceased husband, who had been employed by a Czechoslovak banking corporation, the predecessor of the defendant, another Czechoslovak bank. He had been a citizen and resident of Czechoslovakia, and in 1938 had entered into a contract in Prague with

[26] *Staff Papers*, Vol. II, pp. 490–92 (November 1952).
[27] 110 N.Y.S. (2d) 446 (1952).
[28] 304 N.Y. 533, 110 N.E. (2d) 6 (1953).
[29] For the text of Article XVIII, see n. 44, *infra*.
[30] For the text, see International Monetary Fund, *Annual Report, 1949*, Appendix XIV, pp. 82–83. It has also been published in *Staff Papers*, Vol. I, pp. 326–27 (April 1951); *Revue Critique de Droit International Privé*, Vol. XL (1951), pp. 586–87; *U.S. Federal Register*, August 19, 1949, pp. 5208–9.

his employer under which he was entitled to a certain pension payable monthly at the employer's Prague office. The husband left Czechoslovakia in November 1940 and became a citizen and resident of the United States, where he died in June 1949. He received his pension until the end of October 1942, but payment then ceased. Before his death, he obtained an attachment of the defendant's funds in New York, and brought this action to recover the dollar equivalent of the pension payable after November 1, 1942. At the date when the contract was made and at all times thereafter, Czechoslovak exchange control regulations probibited payments to nonresidents, in domestic or foreign currency, without the license of the exchange control authorities. Czechoslovak currency had been deposited by the defendant in a blocked account in the husband's name in Czechoslovakia, but withdrawals could not be made without a license, and no license for withdrawals or for payment in any other form had ever been granted.

On appeal to the Court of Appeals, the parties agreed that Czechoslovak law governed the contract under the private international law of New York. The defendant argued that it had performed the contract as permitted under that law, and performance in any other form was prohibited by it. Since the New York action was for breach of contract, it must fail because there was no breach. The public policy of New York did not require that the Czechoslovak exchange control regulations, which prescribed the form of performance and in accordance with which performance had been made, should be refused recognition by a New York court. The necessity for exchange control regulations was recognized by various provisions of the Fund Agreement, and one of them, Article VIII, Section 2(b), imposed a duty on members in certain cases to respect the regulations of other members. The first sentence of that provision had been given "full force and effect" by the Congress of the United States in its Bretton Woods Agreements Act.[31]

The plaintiff argued that the Czechoslovak exchange control regulations did not relate to the substance of the plaintiff's rights but only to the remedies for their enforcement. They should, therefore, be refused recognition under the rule of New York private international law by which remedial matters are governed by the law of the forum and not some foreign law. They should be ignored for the further reason that the regulations were penal and confiscatory. Moreover, the protection of the Czechoslovak economy was contrary to the public policy of the United States, and recognition of the regulations should be withheld on this ground also. Article VIII, Section 2(b) of the Articles of Agreement of the Fund did not apply because the pension contract was not an "exchange contract" within the meaning of that provision.

[31] 59 Stat. 512 (1945).

The Appellate Division had held that the plaintiff's claim succeeded and could be satisfied from the dollar funds of the defendant which had been attached. The Court of Appeals decided unanimously to reverse this judgment. Its opinion was brief. The contract, it held, was governed by the law of Czechoslovakia, the place where it had been made and was to be performed. The defendant had performed the contract as permitted by that law. New York courts could not refuse on the ground of public policy to give effect to exchange control regulations that were part of Czechoslovak law, because both the United States and Czechoslovakia were members of the Fund. The Court made no express mention of Article VIII, Section 2(b) or any other specific provision of the Fund Agreement.

The practical importance of the case is obvious. The effect of the decision is to extend an important measure of protection to the dollar assets of other members of the Fund. However, it is not completely clear on what principle the decision rests. There are at least two alternative readings of the case. Both have significant legal implications of a novel character, and an attempt will be made here to indicate what they are.

One view of the Court of Appeals' decision is that it was not based on Article VIII, Section 2(b) as such, but on the general effect of membership in the Fund.[32] Such a view would mean that even though a case involving the exchange control regulations of another member of the Fund does not come within Article VIII, Section 2(b), for example because the contract involved is not an "exchange contract," the courts of a member country should not refuse to recognize the regulations. This rule would apply whenever the law of which the exchange control regulations are part is the law governing the contract according to the private international law of the forum. Moreover, such a rule would seem to apply even though no contract at all were involved. There would be no reason why the rule should not extend to any situation in which the law of another member country is applicable under the private international law of the forum and the foreign law includes exchange control regulations which affect the issue. An example of such a case would be one in which the foreign law governs the distribution of a decedent's estate.[33] In short, if the *ratio decidendi* of the *Perutz* case is not Article VIII, Section 2(b), the principle that public policy can no longer be relied upon for refusing to recognize the exchange control regulations of another member of the Fund will extend far beyond the cases embraced by the provision.

The alternative view of the *Perutz* case is that the Court of Appeals

[32] That this is the correct view of the *Perutz* case has already been argued in the supplemental memorandum of law submitted to the Supreme Court of New York by the intervenor in *Bata v. Bata a.s.*

[33] See, for example, *In re Liebl's Estate*, 106 N.Y.S. (2d) 715 (1951).

must be taken to have based its decision on Article VIII, Section 2(b). As against this interpretation of the case it may be objected that the Court made no express reference to the provision even though it was the subject of arguments advanced by both sides. The further objection may be made that, if the Court was relying on the provision, it should have based its application of Czechoslovak law, not on the private international law of New York, but on the thesis that Czechoslovak currency was the currency "involved" under the provision. Nevertheless, the result is consistent with Article VIII, Section 2(b), and with the Fund's interpretation of it, particularly on the vital question of public policy. It can hardly be asserted, therefore, that it will be impossible for future courts to treat the decision as having been tacitly based on Article VIII, Section 2(b). In fact, it has already been argued by one author that the case must be thought of as decided under that provision because its presence in the Fund Agreement makes it illogical to assume that there is a further or different obligation in the Agreement with respect to the recognition of exchange control regulations.[34]

If the view does prevail that the case was decided on the basis of Article VIII, Section 2(b), it will have a bearing on a number of questions arising under the provision that were not dealt with in the Fund's interpretation. Some of these questions have already been discussed in legal literature, particularly in contributions by two prominent authorities on monetary law, Dr. Mann and Professor Nussbaum. It is interesting, therefore, to relate the *Perutz* case, *treated as a decision under Article VIII, Section 2(b)*, to the views held by these two authors. However, the merits of those views will not be examined here, and it is not suggested that any of the views would necessarily have been accepted by the court.

(i) Dr. Mann[35] has argued that Article VIII, Section 2(b) deals only with the making of contracts and not with their performance. That is to say, the provision applies only if the contract when made was contrary to the appropriate exchange control regulations. Conversely, the provision does not apply if the contract when made was consistent with those exchange control regulations even though performance when sought is contrary to them. In the *Perutz* case, the contract when made was completely in accordance with Czechoslovak exchange control regulations. It was the particular performance sought by the plaintiff, i.e., recovery of dollars after he became a nonresident of Czechoslovakia, which was contrary to the regulations. The *Perutz* case would thus

[34] B. S. Meyer, "Recognition of Exchange Controls after the International Monetary Fund Agreement", *Yale Law Journal*, Vol. 62 (1953), pp. 868–910.

[35] F. A. Mann, "The Private International Law of Exchange Control Under the International Monetary Fund Agreement", *International and Comparative Law Quarterly*, Vol. 2 (1953), pp. 106–7.

conflict with Dr. Mann's conclusion that the general rules of private international law are displaced by Article VIII, Section 2(b) only insofar as questions of the initial validity of an exchange contract are concerned.

(ii) Closely related to the foregoing is Dr. Mann's conclusion that the question whether or not a contract is an "exchange contract" within the meaning of Article VIII, Section 2(b) must be decided solely with reference to the time when it was made. "A contract made between two residents of France and lacking any international aspects, can be enforced in England if, e.g., the debtor establishes his residence [in England], even though such enforcement is contrary to French exchange control regulations, for the contract was not an exchange contract when made and does not become an exchange contract by the change of the debtor's residence."[36] Yet this was the pattern of facts in the *Perutz* case. The contract was made in Czechoslovakia between two residents; enforcement was sought, contrary to Czechoslovak exchange control regulations, after one of them had become a nonresident. The effect of the *Perutz* case would thus be that the date as of which to determine whether a contract is an "exchange contract" is the date at which a party seeks to get enforcement of it.

(iii) The *Perutz* case would also imply a view on the problem of the definition of "exchange contracts". Professor Nussbaum[37] has described them as contracts involving the exchange of one currency for another. This was not the nature of the contract in the *Perutz* case, and Professor Nussbaum's view could not be reconciled with it. However, the case would be consistent with Dr. Mann's theory that an "exchange contract" is one that affects the exchange resources of a country.[38]

(iv) Finally, the case would be consistent with the views expressed by both Professor Nussbaum[39] and Dr. Mann[40] to the effect that Article

[36] *Ibid.*, p. 106.

[37] Arthur Nussbaum, "Exchange Control and the International Monetary Fund", *Yale Law Journal*, Vol. 59 (1950), pp. 426–27, and *Money in the Law, National and International* (Brooklyn, 1950), pp. 542–43.

[38] F. A. Mann, *op. cit.*, p. 102 and "Money in Public International Law", *British Yearbook of International Law*, Vol. 26 (1949), p. 279. Dr. Mann has abandoned an earlier view that an "exchange contract" is one that provides for consideration in the form of exchange; see "The Exchange Control Act, 1947", *Modern Law Review*, Vol. 10 (1947), p. 418. This was not the same as Professor Nussbaum's view because a contract may provide for the payment of exchange otherwise than in return for another currency. The sale of goods for exchange is an obvious example. In the supplemental memorandum of law of the intervenor in *Bata v. Bata a.s.* (see n. 32, *supra*), it was argued that "the Court of Appeals [in the *Perutz* case] could have founded its decision on Article VIII, Section 2(b) only if it determined that the words 'exchange contract' in the section were intended to include all monetary transactions which affected the exchange resources of a member country."

[39] Arthur Nussbaum, "Exchange Control and the International Monetary Fund", *Yale Law Journal*, Vol. 59 (1950), p. 427, and *Money in the Law, National and International* (Brooklyn, 1950), p. 543.

[40] F. A. Mann, "The Private International Law of Exchange Control Under

VIII, Section 2(b) applies to exchange control regulations adopted and contracts made before the Fund Agreement took effect.

Privileges and Immunities

The second installment of the survey of cases involving the Fund's Articles of Agreement[41] included an account of the case of *International Bank for Reconstruction and Development and International Monetary Fund v. All America Cables and Radio, Inc., The Commercial Cable Company, Mackay Radio & Telegraph Company, Inc., RCA Communications, Inc., The Western Union Telegraph Company*,[42] in which the Hearing Examiner of the Federal Communications Commission, a U.S. agency which exercises regulatory powers over the rates charged for cable communications, delivered his Initial Decision in favor of the Fund and Bank.[43] Exceptions were taken to the Hearing Examiner's decision, and the case was then heard by the Commission, which on March 23, 1953 released its Final Decision. In substance, this confirms the Initial Decision of the Hearing Examiner, subject however to one modification.

The case arose in the following circumstances. In 1949 the cable companies proposed to adopt revised tariffs of charges under which the Fund would be required to pay the same commercial rates for its official telecommunications messages as were payable by private persons. Before July 1, 1949 the Fund had paid the same rates that applied to the messages sent by foreign governments from the United States to their own countries. These rates were substantially lower than the commercial rates. The Fund filed a complaint with the Federal Communications Commission contending that the revised tariffs were unlawful on the ground that, as long as special governmental rates were in existence, the Fund was entitled to the same standard of treatment.

The Fund's case was based mainly on Article IX, Section 7 of its Articles of Agreement, which provides that:

> The official communications of the Fund shall be accorded by members the same treatment as the official communications of other members.

This provision had been given "full force and effect" in the United States, its territories and possessions by Section 11 of the (U.S.) Bretton Woods Agreements Act. The Fund also relied upon other U.S. statutes.

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the International Monetary Fund Agreement", *International and Comparative Law Quarterly*, Vol. 2 (1953), p. 104.

[41] *Staff Papers*, Vol. II, pp. 482–89 (November 1952).

[42] F.C.C. Docket No. 9362.

[43] For convenience, the case will be discussed here in terms of the Fund and the Fund Agreement, but all such discussion should be understood to apply equally to the Bank and its Articles of Agreement.

Article IX, Section 7 had been the subject of an interpretation by the Executive Directors of the Fund under Article XVIII of its Agreement.[44] This was the result of certain questions put to the Executive Directors by the Executive Director for the United States at the request of the (U.S.) National Advisory Council on International Monetary and Financial Problems. The interpretation stated the following propositions:

> (1) Article IX, Section 7 applies to rates charged for official communications of the Fund.
>
> (2) A member which exercises regulatory powers over the rates charged for communications is not relieved of its obligation under the provision because the facilities for transmitting communications are privately owned or operated or both.
>
> (3) The obligation of a member under the provision is not satisfied if official communications of the Fund may be sent only at rates that exceed the rates accorded the official communications of other members in comparable situations, as for example where the rate charged the Fund for its official communications from the territory of member A to the territory of member B exceeds the rate charged B for its official communications from the territory of A to that of B.[45]

The basic issue in the case before the Commission was whether the word "treatment" in Article IX, Section 7 embraces rates or whether, as contended by the companies, it is confined to such matters as priorities and freedom from censorship. This issue involved consideration of the binding force of interpretations by the Fund under Article XVIII of its Agreement.

The Commission decided that the question whether the word "treatment" applied to rates was conclusively determined by the Fund's interpretation. This novel procedure for issuing interpretations binding on member governments was an integral part of the Fund Agreement, and the United States, in resorting to the procedure in Sections 12 and 13 of its Bretton Woods Agreements Act, had already recognized that it

[44] Article XVIII:
(*a*) Any question of interpretation of the provisions of this Agreement arising between any member and the Fund or between any members of the Fund shall be submitted to the Executive Directors for their decision. . . . (*b*) In any case where the Executive Directors have given a decision under (*a*) above, any member may require that the question be referred to the Board of Governors, whose decision shall be final. Pending the result of the reference to the Board the Fund may, so far as it deems necessary, act on the basis of the decision of the Executive Directors.

[45] For the text of the interpretation, see International Monetary Fund, *Annual Report, 1950*, Appendix XI, pp. 118–19.

was bound by such interpretations. The interpretation in this case could not be any the less binding because it was the policy of the United States and the Commission to eliminate government rates. As long as they did exist, the Fund was entitled to the same standard of treatment, and policy must yield to international obligation.

The Commission rejected the argument of the cable companies that the interpretation was *ultra vires* because the question with which it dealt arose between the Fund and private companies. The question was raised by one member and involved all members of the Fund. It was thus within Article XVIII, even though in the result private companies might be affected. Nor did the decision lack the requisite finality because it had not been appealed from the Executive Directors to the Board of Governors. The interpretation had been adopted unanimously, and no member government had indicated any intention to appeal from it. Moreover, even if it were assumed that the Commission would not be bound to give effect to an interpretation which was so unreasonable, arbitrary, or capricious as to be an amendment rather than an interpretation of the Fund Agreement, the interpretation in this case was not of such a character. Finally, the Commission disposed of arguments that Article IX, Section 7 did not include rates because it dealt only with customary diplomatic privileges and immunities; that the provision as interpreted had been abrogated by certain telecommunications conventions entered into after the Fund Agreement took effect; that the (U.S.) Communications Act, 1934, under which the Commission determines the lawfulness of rates or the existence of discrimination, had not been expressly amended by the (U.S.) Bretton Woods Agreements Act; and that the Fund could not invoke its Articles or certain statutes before the Commission because they involved questions of interpretation of international executive agreements and statutes which were beyond the jurisdiction of the Commission.

Having concluded that the interpretation of the Executive Directors that the communications privileges of the Fund included rate treatment was binding on it, the Commission then went on to determine precisely what rate treatment the Fund was entitled to under the interpretation. It was on this part of the case that the Commission departed from the opinion of the Hearing Examiner. The latter had decided, in accordance with the argument advanced by counsel for the Fund, that the obligation of the United States to ensure that the Fund received the same preferential rates for its official communications as U.S. cable companies accorded to other member governments did not depend on any showing of reciprocity by the foreign correspondents of the U.S. companies. The Commission pointed out, however, that international cable service is a bilateral process, and before such service can be instituted a U.S.

company must make appropriate arrangements with the foreign correspondent or government with which it expects to exchange traffic. Thus, the grant of reduced rates by a U.S. company for the official messages of a foreign government to its territory is generally the result of an agreement in which the foreign correspondent or government agrees to settle on the basis of the reduced tolls and to grant reduced rates to official U.S. Government messages from the foreign territory to the United States. If U.S. companies were required unilaterally to give reduced rates to the Fund without regard to the action of their foreign correspondents, they would not be giving the Fund the "same" treatment as is called for by Article IX, Section 7, but better treatment. The Commission was of the opinion that the interpretation itself recognized that the Fund was not entitled to such better treatment, because it called for the reduced rates accorded other members in "comparable situations."

The Commission concluded, therefore, that Article IX, Section 7 and the Fund's interpretation require U.S. cable companies to grant the Fund reduced rates for its official communications from the United States to another member country (X) when the following three conditions are met:

> (a) Reduced rates are in effect for the official government communications of X, sent from the United States to the home territory of X;
>
> (b) X or the cable company subject to its jurisdiction accords the Fund the same reduced rates for its official messages to the United States as are accorded to similar messages of the U. S. Government;
>
> (c) X or the cable company subject to its jurisdiction agrees to settle its accounts with the U. S. company for such official messages of the Fund on the basis of the reduced rates.

Accordingly, the Commission ruled that the cable companies must file revised tariffs based on governmental rates which would be effective where these three conditions are satisfied.

The Commission also discussed two further bases upon which the Fund had rested its complaint. The first of these was the (U.S.) International Organizations Immunities Act,[46] Section 2(d) of which declared that the privileges accorded the official communications of organizations coming under the Act, of which the Fund was one, "shall be those accorded under similar circumstances to foreign governments". The Commission held that, in view of its decision based upon the Fund's Articles, it was unnecessary to decide what the Fund's rights were under the International

[46] 59 Stat. 669 (1945).

Organizations Immunities Act, but the Commission went on to note that whatever rate privileges might exist under that statute would be subject, in view of the language of Section 2(d), to the same conditions of reciprocity as under the Fund's Articles and the interpretation. Finally, the Fund had argued that there was unlawful discrimination if rates for the Fund were higher than rates for the United Nations, but the Commission held that the cable companies were not required to accord the same rates to the United Nations and to other international organizations.